

NEBULA

MONTHLY

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SCIENCE FICTION

NUMBER 30

NEBULA SCIENCE FICTION

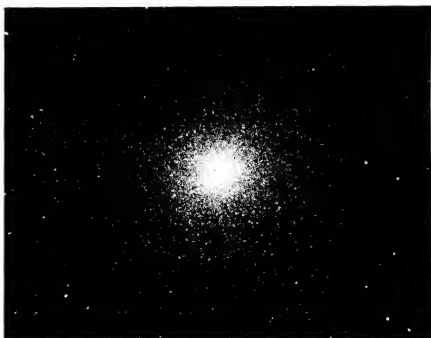
No. 30



D. MCKOWN

AMERICA'S FAVOURITE SF AUTHORS

GALACTIC OUTPOSTS



Globular Cluster in Hercules.
(By courtesy of Mt. Wilson and
Mt. Palomar Observatories.)

A. E. ROY, B.Sc., Ph.D., F.R.A.S., F.B.I.S.

Some stars voyage through interstellar space by themselves. A large proportion have partners with which they orbit in their journeys; others associate in threes, a few in fours and so on. A number group themselves in clusters of hundreds of thousands and these associations, of spherical shape, form the mysterious systems of the globular clusters.

About one hundred of these objects are known, the brightest, Omega Centauri, appearing to the naked eye as a rather faint star in the southern heavens. With a telescope and suitable photographic techniques, these objects are revealed in all their beauty to be systems of orbiting stars of all colours, the members of each system moving under the gravitational attraction of the system's combined mass.

If a celestial chart is made of the distribution of the globular clusters,

Continued on inside back cover

NEBULA

SCIENCE FICTION

Edited by **PETER HAMILTON**

Issue Number Thirty

Novelettes:

- | | | |
|---|----------------------------|-----------|
| JOURNEY TO THE INTERIOR | Brian W. Aldiss | 3 |
| <i>Into that nightmare world of floating death the life-saver projected herself—to precipitate the downfall of mankind</i> | | |
| THE COVETOUS | H. Philip Stratford | 82 |
| <i>There was something odd about this little Earth-like planet . . . and something priceless which its natives gave away, merely for the asking</i> | | |

Short Stories:

- | | | |
|---------------------------------|---------------------------|-----------|
| P.S. | Eric Frank Russell | 21 |
| NOTHING FOR MY NOON MEAL | Harlan Ellison | 33 |
| TRAINING AREA | E. R. James | 47 |
| LONE VOYAGER | Donald Malcolm | 61 |
| THE WANTON JADE | E. C. Tubb | 66 |

Special Features:

- | | | |
|-----------------------------|----------------------------|------------|
| Look Here | Peter Hamilton | 2 |
| Solar System Ecology | Kenneth Johns | 98 |
| Something To Read | Kenneth F. Slater | 102 |
| Scientifilm Previews | Forrest J. Ackerman | 106 |
| Fanorama | Walter Willis | 108 |
| Guided Missives | The Readers | 110 |

Front Cover by **D. McKeown**

Back Cover by **Arthur Thomson**

Black and White Illustrations by **Arthur Thomson, D. McKeown and John Greengrass**

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Look here

My editorial in NEBULA Number 27 seems to have been one of the most controversial I have written so far; reader reaction to my condemnation of the pornographic, the horrific and the squalid in science-fiction ranging from the greatest possible measure of agreement on the one hand to the most violent and heated contradiction on the other. What surprised me most was that while the majority of my correspondents think, as I do, that badly written science fiction should be vociferously denounced by those of us anxious to preserve the high literary standard of the genre as a whole, a considerable number of them disagree with me for one reason or another on the moral issues involved.

On the question of "exaggerated sex" in particular, many readers—among them one or two quite well-known personalities in the science-fiction world—were at pains to point out to me that moral standards alter not only from one place to another around the world but also from one age to the next, depending on the individual's reaction to the standards of moral behaviour currently in vogue in his own time and environment.

The truth of this somewhat naïve argument is patently obvious, but in my view it does nothing to justify the fact that in nine out of every ten science-fiction stories which deal with the moral and ethical standards of future society a marked *deterioration* of these standards is always envisaged. Even in many such stories set in the present day the moral outlook and in particular the sexual behaviour of supposedly intelligent people can only be described as disgusting. The presupposition in many "works of literature" that a co-operative female is the one and only prerequisite of a thoroughly enjoyable evening can only be indicative of an extremely crude and immature outlook on life on the part of the author responsible and is, indeed, an implied insult to the good taste and refinement of his readers.

The most popular answer to all this—but one which is not applicable to stories set in the present time—is that these writers are merely extrapolating present day trends to come up with a future almost devoid of the already fast-disappearing "decencies" of the past, taking full advantage of our calm acceptance of the violence, vulgarity, and immoderate living which forms the basis of so much of our entertainment today and to the effect which this will undoubtedly have on the morals of future generations.

This is all very well, but it is true also that an author has certain responsibilities to his readers and while he may be forced by logic to describe his imagined future society in the light of present day trends towards habitual violence and loose morals, it is not essential for him to uphold the depraved picture thus obtained as being a kind of ideal to which we should look forward in eager anticipation.

In science-fiction, where the scientific achievements of mankind are usually taken to be almost limitless, is it too much to hope for a correspondingly elevated conception of man himself?

A handwritten signature in black ink, reading "Peter Hamilton". The script is fluid and cursive, with a large, stylized 'P' and 'H'.

Journey to the Interior

*Into that nightmare world of floating death the life-saver
projected herself—to precipitate the downfall of mankind*

Illustrated by Arthur Thomson

It was one of those unlikely accidents which are likely to occur anywhere. The undersea trawler *Bartholomew* was approaching the sub-port of Cape Verde at four hundred and ninety fathoms when it developed engine trouble. I am not a technical man, so that I cannot exactly describe the fault; apparently uranium slugs move slowly through the piles of these ships, and the dispensing mechanism which shoots the used slugs into the separators became jammed. Instead of using manual remote control to tackle the fault, the chief engineer, a man called Jean Regard, went in himself to clear the slug-way. As he climbed through the inspection hatches, Regard snagged his protective suit on a latch without noticing it. He was able to repair the congestion in the slug-way without trouble, but collapsed as he emerged again, having collected a near-lethal dose of radiation in his kidneys.

The *Bartholomew* carried no doctor. A general call for one was sent out straight away.

I have said I am no technician; neither am I a philosopher. Yet

I can see in this trivial episode which began so much trouble the pattern of all great things which start as something fairly insignificant: "big oaks from little acorns grow", or "because of a nail a kingdom was lost"; you know what I mean. But this time it was the kingdom of man that was lost.

In the midst of the shifting and immemorial sands of the Sahara crouches the Ahaggar plateau, breasting the dunes like a liner in a sullen sea. On the edge of the plateau stands Barbe Baker, the Institute of Medical Meditation, an elaborate and ancient building in the grand twenty-sixth century manner, as frugal as Angkor Wat, as uncompromising as the Escorial. Set about with palms which lend shade to its wide, paved walks, Barbe Baker thrusts its towers and upper stories above the trees to scan the mighty continent in which it stands—just as its occupants, the doctors, scan the interior of the body, the inner continent of man.

Gerund Gyres, handkerchief perpetually mopping his brow, stood before the main steps of the institute, waiting. His plane which had brought him here stood some distance away in the park. He waited humbly in the rocking heat, although he was a proud man: no layman was ever allowed in Barbe Baker.

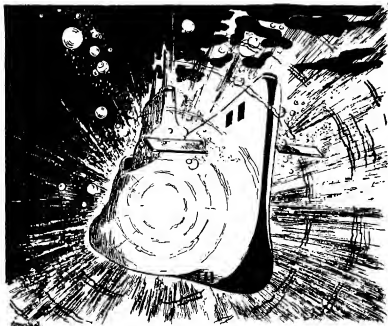
At length the figure Gerund expected to see appeared at the top of the wide steps. It was his wife, Cyro. She turned back, as if to bid someone behind her farewell, and then commenced to descend the steps. As always when Gerund met her here, he was conscious how Cyro, as she came down those steps, had to force her mind out from the cloister of Barbe Baker back into the external world. While he watched with anxiety and love, the curve of her back straightened, her head came up, her pace increased. By the time she reached Gerund, her eyes held that familiar expression of detached amusement with which she faced both life and her husband.

"It feels like weeks since I saw you," Cyro said, kissing Gerund briefly.

"It is weeks," he protested.

"Is it really?" she said playfully. "It doesn't seem as long!"

Gerund took her hand and led her round to the massive triangle that was their plane. The month of meditation which Cyro, as a doctor, was compelled to undergo every year was undoubtedly beneficial for her; based on yoga, the disciplines of Barbe Baker were refresher courses for the brains and bodies of the medical fraternities of the world. Cyro looked younger and more vital than ever; that she was as independent of her husband as usual was also to be expected;



Gerund told himself that, after six years of marriage, he was being irrational to hope for any change in that respect.

They reached the plane. Jeffy, their bonded servant, was leaning against the metal hull awaiting them, arms patiently folded.

"It's nice to see you again, Doctor Cyro," he said, opening the door for them and standing back.

"And you, Jeffy. You're looking brown."

"Baked right through," he said, smiling broadly. His home lay in the bleak Northern island of Britain which, since the redirecting of the Gulf Stream, lay under frost most of the year; the African tour suited him well.

They climbed into their seats, Jeffy taking the pilot's throne. He was a great, slow man who moved like a heavyweight boxer coming in for the kill. His sluggish mentality had left him fit for nothing but the role of a bonded servant, yet he handled the heavy flier with the delicacy of a cat killing a mouse.

Jeffy now taxied them over to one of the semi-circular take-off collars which would absorb their exhaust gases. The green signal came through on the collar beacon and they burst immediately into vertical flight. At once the trees and the white and green walls of

Barbe Baker dwindled away below them, as inconsiderable as a child's charade between the limitless sandwich of sky and sand. The plane headed due West, on a course which would bring them eventually to the Gyres' home in the Bahamas: or would have brought them there but for the sick man a thousand metres under the bland surface of the Atlantic—a sick man of whose very existence they were as yet unaware.

"Well, Gerund, what has happened in the world since I've been out of it?" Cyro asked, settling herself carefully opposite her husband.

"Nothing very exciting. The Ross Barrier Research City has been opened with due pomp. And the world of learning is at logger-heads over Pamlira's new work: 'Para-evolution'."

"I must certainly read that," Cyro said, with a trace of excitement. "What's his theory this time?"

"It's one of those things which doesn't summarise easily," Gerund told her, "but briefly Pamlira claims that evolution is working towards greater consciousness. Plants are less conscious than animals, animals less conscious than men, and men came after the animals which came after the plants. Plants, animals, men, are only the first three steps in a long ladder. Pamlira points out that man is by no means fully conscious. He sleeps, he forgets, he is unaware of the workings of his body——"

"Which is why we doctors exist," Cyro inserted.

"Exactly. As Pamlira himself says, only certain unusual individuals, formed into our present Orders of Medicine, can to some extent participate consciously in somatic activity."

She smiled a neutral smile, well aware that the phrase about unusual individuals was intended as flattery.

"And where does he go from there?" she asked.

"He postulates that the next evolutionary step would be something—a being—conscious in every cell: and that Nature may be already preparing to usher it on to the stage. The time, apparently, is ripe for the new being."

"Already?" She raised a quizzical eyebrow. "I should have thought he was a few million years early!"

"Pamlira spends half the book explaining why the new species is due now," Gerund said. "According to him, evolution accelerates like scientific progress; the more protoplasm available for modification, the sooner the modification appears."

Cyro was silent. With a slight ache in his heart, Gerund noticed that she asked him nothing about his personal opinion of Pamlira's book, though it must have been clear from what he said that he had

read it. She would consider that his opinion as an industrial ecologist was not worth having, and refuse to yield enough to convention to ask him anyway.

Finally, Cyro said, "Whatever this super-conscious new species was, man would give it little chance to establish its supremacy—or even to survive. It would be blotted out before it had a chance to multiply."

"Pamlira says," Gerund told her, "that evolution would take care of that if it really wanted man out of the way. The new species would be given some sort of defence—or weapon—to render it invulnerable against the species it was superseding."

"How?" she asked indignantly, as if he had said something stupid. "Evolution is a completely neutral—blind—process."

"That's what worries Pamlira!" Gerund said, laughing. He could see she considered this remark superficial. So it was; it had been designed to cover his uncertainty of what Pamlira had actually said on that point. Heck, "Para-evolution" was stiff reading; Gerund had only waded through it for Cyro's sake, because he knew the subject would interest her.

"Alright," he thought angrily, "she'd understand the book: I wouldn't. So what? She doesn't understand me."

Para-evolution and its attendant woes were presently driven out of both their minds. Jeffy appeared, framed bulkily in the door dividing the control room from the cabin, while the plane roared on above the Sahara on auto-pilot.

"There's a call coming in for a doctor," he said, trundling his words out one by one. "It's coming from Cape Verde Sub-port, almost dead ahead. They've got an underseaman in urgent need of healing." He looked imploringly at Cyro as he spoke.

"Of course I'll take it," she said, getting up and brushing past him into the control room.

The call was coming through again as she reached the radio. She listened carefully to it, and then answered, formally offering aid.

"Thank you, Doctor Gyres," the Cape Verde operator said relievedly. "We'll wait for your arrival. Out."

They were now only some six hundred miles from the Cape Verde islands; already they had covered nearly twice that distance from Barbe Baker. Even as Cyro left the radio, the Atlantic showed ahead. On this desolate stretch of the African coast, the saddest on earth for all its blinding sun, the desert stretched right to the water's edge—or, to take it conversely, the beach extended from here to Barbe Baker. They flashed across the dividing line between

sand and sea and headed west south-west. Almost at once, cloud formed like a floor below them, blotting out the turning globe.

Within ten minutes, checking his instruments, Jeffy took them down, finally skimming under low nimbo-stratus to find the fourteen islands of the Cape Verde archipelago to their left ahead.

"Nicely calculated," Gerund said. Jeffy played the metal think-box like a child genius conjuring Chopin from a grand piano; he had that flair for machines only granted to the half-witted.

The plane banked to port round Sao Tiago and plunged down towards the sea, dropping vertically. The grey waters came up to meet them like a smack in the face, boiled round them, swallowed them, and the altimeter finger on the instrument panel, swooping past the "Zero" sign, began to read fathoms instead of feet.

Jeffy was in radio contact with the sub-port again. Beacons at ten-fathom intervals lit their way down to the underwater city. Finally a hangar, poised above a hundred-fathom gulf, loomed whale's mouth wide in front of them; they jetted in and the jaws closed behind them. Powerful valves immediately began to suck the water from the hangar, replacing it with air.

Already mentally composing herself for what was to come, Cyro was out of the flier before the dock hand on the vacobile could get round to collect up the trapped fish and blow the floor dry. Gerund and Jeffy were left to follow as best they might.

Outside the hangar, two port officials greeted Cyro.

"Thank you for coming so quickly, Doctor Gyres," one of them said. "They probably told you the details of the case on the radio. It's the chief engineer of the undersea trawler *Bartholomew* who's in trouble. . . ."

As he related the cogent facts of the case, the official ushered Cyro, Gerund and Jeffy aboard a small, open bus. The other official drove, and they sped along the strange waterfront where, despite all the usual bustle connected with a dock, no water could be seen.

For ages, the human species had regarded the seas as either a perilous highway or a suitable place in which they could make hit and run raids on the shoals of fish there; then, belatedly, it had taken the oceans in hand and tended them with the same care it bestowed on the land. As more and more personnel were drawn to work on the savannahs of the deep, so the sub-ports had grown up, underwater towns paying little homage to their softer counterparts on dry land.

Cape Verde Sub-port, because of its favoured position in the Atlantic, had been one of the first such ports to be established. The quarter of the city in which the little open bus now stopped was more

than ten centuries old. The hospital into which they were ushered presented a crumbling façade to the world.

Inside were the usual monastic arrangements of hospitals everywhere. From a cloister, doors gave onto a waiting-room, a primitive kitchen, a radio room, small cells. In one of the cells lay Jean Regard, chief engineer of the *Bartholomew*, with a dose of hard radiation in his kidneys.

An ancient bond-man, bent and grey-bearded, was on guard. Otherwise the place was empty.

"Well, see what you can do for the poor fellow, doctor," one of the officials said, shaking Cyro's elegant hand. "I expect the captain of the *Bartholomew* will call through soon. Meanwhile, we will leave you in peace."

"Thank you," Cyro said, a little blankly, her mind already far from them. She turned away, went into the sick man's cell and closed the door behind her.

For some while after she had gone and the officials had left in their bus, Gerund and Jeffy stood aimlessly in the cloister. Jeffy wandered to the archway and looked out at the street. Occasionally a bonded man or woman passed, looking neither to the right nor the left. The dully-lit fronts of the buildings, many of them carved from the rock, looked like the dwellings of the dead.

Jeffy wrapped his great arms about his torso.

"I want to go home," he said. "It's cold here."

A bead of moisture fell from the roof overhead and splashed on his cheek. "It's cold and *damp* here," he added.

The grey-bearded guard regarded him with a sardonic eye, without speaking. For a long while there was no more speech. They waited almost without thought, their level of consciousness as dim as the lights outside.

As soon as Cyro Gyres entered the cell, she climbed onto the bunk with the sick man.

Regard was a heavy fellow. Under the single blanket, his vast frame laboured up and down with the effort of breathing. The stubble on his face thrust up through three great, pallid jowls. Lying beside him, Cyro felt like Mahomet visiting the mountain.

That the mountain was unconscious only made Cyro's task easier. She placed her bare arm over Regard's bare arm and closed her eyes. She relaxed her muscles, slowing her breathing rate. This was, of course, all standard professional procedure. Efficiently, Cyro reduced the rate of her heart's beat, concentrating on that vital pulse

until it grew and grew, and she could submerge herself in it.

She was sinking down through a dull red haze, a featureless haze, a haze stretching from pole to pole. But gradually, a mirage forming in the distance, striations appeared through the haze. The islands of the blood slid up to meet her. The islands moved with the clerical purpose of vultures, expanding, changing, ranging, rearranging—and still she moved among them. Here the dimensions carried no sense of up or down; even near and far were confused to her sight which was no longer sight.

Not only sight had she lost. Almost every other ability except volition had been stripped from her when she took this plunge into the somatic world of her own bodily universe, as a man throws off all his clothes before diving into a river. She could not think, remember, taste, touch, turn, communicate or act; yet a shadow of all these things remained with her; much as the dragonfly larva, climbing its reed out of the ooze, carries a vague image of the creature it will become, Cyro had some memory of herself as an individual. And this pale memory stayed with her by dint of the years of training she had received in Medical Meditation. Otherwise she would have been lost in that most terrible trap of all: the universe of one's own body.

Almost without will, she headed down her bloodstream. It was swimming (flying? crawling?) through an endless everglade, flooded above the tree-tops, treacle-thick with fish, minnow, mackerel, mace and manta ray. It was creeping (climbing? drifting?) down a glass canyon, whose walls flickered with more than earthly fire-light. So, so, until before her loomed a wavering cliff.

The cliff ran round the universe, insubstantial as muslin, pock-marked with rabbit holes, through which phantasmic creatures came and went. She drifted through it almost without resistance.

Now she had passed her lobe of consciousness, her *psyche*, into Jean Regard's arm, into his *soma*.

Her surroundings were as weird, as strange, as familiar, as they had been before. Submerged on this cellular level, there could be no difference between his body and hers. Yet a difference was there. From the forests of his flesh, strange and always unseen eyes watched her, and a silent and malevolent regard traced her course; for she was an intruder, venturing into the interior of an alien world especially designed to show an intruder no mercy. Only the confidence of her step held the defending powers at bay.

As she moved on, corpuscles like stars about her, the surrounding activity grew more intense. She was swept along, as if by a glutinous current, moving under arches, among branches, past weed

tangles, through nets, and the way ahead grew dark and stagnant; though she still drifted forward, the half-live things about her were squirming away, repulsed, flickering with crude blueprints of pain.

She was nearly at the infected kidneys now.

Only the stern disciplines of medical meditation now prompted her on. The atmosphere was so thickly repellent, she might have been wallowing in a sewer. But medicine had long ago discovered the powers of self-healing that lie within a body; yoga had pointed the way to releasing those powers. Nowadays, with the psyche of one of the Order of Medicine to spur it on, a patient's body could be made to regenerate itself: to grow a new limb, a new lung, a new liver. The doctors, the modern skin divers, submerged to marshal the martial forces of the anatomy against its invaders.

Cyro called to those forces now. About her, layer on layer, horizon-high, the cells of the invaded body, each with its thirty thousand genes, lay silent and seemingly deserted. Then, slowly, reluctantly, reinforcements came to her, like rats crawling out of a ruined city. *The enemy is ahead!* she pulsed to them, moving forward into the tattered darkness. More and more, they were coming to her cause, lighting the sewer with their internal fires.

Things like little bats hurtled, chittering, at them out of the heart of the darkness, were struck down, were devoured. And then the enemy launched his assault against them.

He was one, he was a million!

He was nothing the text books knew of.

He fought with laws and powers entirely his own.

He was monstrous, bestial, occult, a greed with cobra fangs, newly hatched. He was so overwhelming, Cyro hardly felt fear: the puissance of the unknown can kill everything but calm in us. She was aware only that a random radioactive particle had struck down and buried itself into a random gene, producing—with a ferocious defiance of the laws of chance—a freak cell, a mutant cell with unfamiliar appetites.

Those appetites had lain dormant until *she* approached. *She* had triggered them, woken them. She had breathed her touch of consciousness onto them, and at once the cell had filled with its own awareness. And its awareness was of the desire to conquer.

She could see—feel—hear—sense—that it was tearing through cell after cell, like a maniac through empty rooms, filling them with its rebellion. The healing forces about her turned and fled in panic, winging and swimming against a wind which held them helpless.

Cyro, too, turned to escape. Her own body was her only refuge, if she could get there.

But the nailed streamers came out of the darkness and wrapped themselves about her. She cracked open her jaws to their toothed extremes, struggling to scream; at once her mouth was filled with sponge, from which little creatures flung themselves and scampered wildly through her being, triumphing. . . .

Gerund and Jeffy sat smoking on a bench under the eye of the grey-bearded bond-man. Empty mugs stood beside them; Jeffy had boiled them a hot drink in the kitchen. Now they sat waiting uneasily for Cyro to reappear, their uneasiness growing as the time slipped away.

"I've never known her to take so long on a case before," Gerund said. "Five minutes is generally all she needs. As soon as she has organised the powers of recovery, she comes back."

"This engineer—he sounded pretty bad," Jeffy said.

"Yes, but all the same Five minutes more and I'm going in to see her."

"That's not permitted," declared the grey-beard; it was the first time he had spoken. What he said was no less than the truth. The etiquette governing doctor and patient was very strict, in their own interests; they could not be viewed together, unless by another doctor. Gerund was perfectly familiar with this rule; he had, indeed, a reluctance to see his wife in a trance state, knowing that the sight would only serve to emphasise the gulf there was between them. All the same, Cyro had been in that room for half an hour.

He sat it out for a couple more minutes before getting up and going over to the cell door. Grey-beard also rose, shouting angrily. As he started to intercept Gerund, Jeffy blocked his way.

"Sit down or I'll pull your nose off," Jeffy said unemotionally. "I'm very strong and I got nothing better to do."

The old man, taking one look into Jeffy's face, went obediently back and sat down. Gerund nodded at his servant, opened the cell door and slipped inside.

One glance told him that something was wrong here—gravely wrong. His wife and the massive engineer lay side by side, their arms touching. Their eyes were open, bulging coldly out into space like cod's eyes on a slab, containing no life whatsoever. But their bodies were alive. Every so often, their frames vibrated and bulged and settled again. Cyro's right heel kicked briefly against the bunk, beating a meaningless rat-tat on the wooden bed foot. Her skin was

gradually suffusing with a crimson blush like a stain; it looked, thought Gerund, as if every shred of flesh in her body had been beaten to a pulp. For a while he stood there transfixed in horror and fear, unable to collect his wits and decide what to do.

A big cockroach swarmed up the leg of the bed. It passed within six inches of Jean Regard's foot, which protruded bare from under his blanket. As the cockroach moved by, a section of the sole of the foot suddenly grew into a stalk; the stalk licked out as quickly as a tongue and caught the insect, its legs waving. Gerund slid quietly to the ground in a faint.

Now the flesh on the bed began to change more rapidly. It had organised itself. It slid and smeared out of shape, or flowed in on itself with smacking noises. The cockroach was absorbed. Then, compressing itself, the mass formed back into one human form; Cyro's. Face, body, colour of hair, eyes: all became like Cyro's, and every drop of flesh was squeezed into her making. As her last fingernail formed, Gerund rolled over and sat up.

Surprise seized him as he stared about the cell.

It had seemed to him that he had been senseless only a second, yet the sick man had gone! But at least Cyro looked better now. She was smiling at him. Perhaps, after all, his anxiety had produced some beastly kind of optical illusion when he entered the cell; perhaps everything was all right. But on looking more closely at Cyro, his returning sense of reassurance vanished.

Something had happened. It was uncanny! The person sitting on the bed was Cyro. And yet—and yet—every line of her face, every subtle contour Gerund loved so well, had undergone an indefinable transmutation. Even the texture of her flesh had changed. He noticed that her fingers had grown. And there was another thing—she was too big. She was too thick and too tall to be Cyro, and she sat on the bed looking at him, trying to smile.

Gerund stood up, faintness threatening to overwhelm him again. He was close to the door. He could run, or he could call for Jeffy, as his instincts bid him.

Instead, he conquered his instincts. Cyro was in trouble, supreme trouble. Here was Gerund's chance, possibly his final one, to prove his devotion to her; if he ran from her now, his chance would have passed for ever—or so he told himself, for Gerund could not believe his wife's frigidity rested on anything but a distrust of his integrity.

He turned back to her, ignoring her frightfulness.



"Cyro, Cyro, what is wrong?" he asked. "What can I do? Tell me what I can do to help. I'll do anything."

The creature on the bed opened its mouth.

"I shall be better in a minute," it said huskily. The words did not quite coincide with its lip movements.

With a heave, it stood on its feet. It was over six feet tall, and burly. Gerund stared at it as if hypnotised, but managed with an effort of will to hold out a hand to it. "It's my wife," he told himself; "it's only my wife." But as it lumbered towards him, his nerve broke. The look on its face was too terrible. He turned, too late to get away. It stretched out its arms and caught him almost playfully.

In the cloister, Jeffy was growing tired. For all the affection he bore his master, he found the life of a bond-servant a tedious one at times. Under the fishy eye of the old guard, he spread himself along the bench, preparing for a nap; Gerund would call him soon enough when he was wanted.

A bell rang in the radio room.

Casting one last suspicious look at Jeffy, the old man went to answer the call. Jeffy settled back to doze. In a minute, scuffling sounds made him open an eye. A monstrous form, its details lost in

the feeble lighting, lumped along on eight or ten legs and vanished into the street. Jeffy was on his feet instantly, a wave of cold horror brushing tenderly over his skin. He turned and made at a run for the sick cell, instinctively connecting this monster with a threat to those he served.

The cell was empty.

"Here, what are you up to?" asked a voice behind him; the grey-beard had come up at the sound of Jeffy's footsteps. He peered past Jeffy's elbow into the room. As soon as he saw it was empty, he pulled out a whistle and began to blow wildly on it.

JUDGE: "You offer as an explanation of the disappearance of your master and mistress the possibility that they may have been—er, devoured by this monster you claim you saw?"

JEFFY: "I didn't say that, sir. I don't know where they went to. I only say I saw this thing slipping out of the hospital, and then they were gone."

JUDGE: "You have heard that nobody else in the Sub-port has seen any such monster. You have heard the evidence of Laslo, the hospital guard, that he saw no such monster. Why then do you persist in this tale?"

JEFFY: "I can only say what happened, can't I?"

JUDGE: "You are *supposed* to say what happened."

JEFFY: "That is what happened. It's the truth! I've no secrets, nothing to hide. I was fond of my master. I would never have done away with him."

JUDGE: "Bonded servants have expressed such sentiments before, after their masters were dead. If you are innocent of what you are accused, why did you attempt to escape when old Laslo blew his whistle for the police?"

JEFFY: "I was rattled, sir, do you understand? I was frightened. I'd seen this—thing, and then I'd seen the empty cell, and then that ruddy old fool started blowing that row in my ear. I—I just hit him without thinking."

JUDGE: "Hm. You do not reveal yourself as a very responsible man. We have already heard the witness Laslo's account of the way you threatened him with force soon after you arrived at the hospital."

JEFFY: "And you've heard me tell you why I did so."

JUDGE: "You realise, I hope, the serious position you are in? You are a simple man, so I will put it to you simply: under world law, you are charged with the double murder of your master and mistress, and until their bodies are recovered or further evidence

comes to light, you are going to be housed in our prison."

There were two ways up from the sub-port to the surface of the Atlantic. One way was the sea route, by which both the *Bartholomew* and the Gyres' plane had arrived. The other was a land route. An underground funicular railway climbed through three thousand feet from the submerged city to the station in Praia, the capital of the island of Sao Tiago. It was by this route that Jeffy was brought to prison.

His cell looked over a dusty courtyard sheltered by a baobab to the sea. It was good to be above ground again, although the cloudy overcast created a greenhouse atmosphere which was particularly oppressive after the cool airs of the sub-port; Jeffy sweated perpetually. He spent a lot of his time standing on his wooden bed, staring out into the heat. Other convicts, out for exercise, talked to each other under his window in the local *lingua crioula*, but Jeffy understood not a word of it.

Towards the evening of the second day of his confinement, Jeffy was at his usual perch when a wind arose. It blew hotly through the prison, and continued to blow. The heavy cloud was shredded away, revealing the blue of the sky. The chief warder, a swarthy man with immense moustaches, came out into the courtyard, sampled the air, approved, and strolled over to the stone seat under the baobab tree. Dusting it carefully with his handkerchief, he lay down and relaxed.

On top of the wall behind the warder, something moved. A thing like a python uncoiled itself and began to drop down into the courtyard; it seemed to spread over the wall like a stain as it came, but the heavy foliage of the baobab made it difficult to see what was happening. It looked to Jeffy now as if a rubbery curtain set with jewels and starfish were gliding down the wall. Now it landed behind the warder.

Whatever the thing was, it raised a flapper like a snake about to strike and clamped it over the unsuspecting warder's face. Then the rest of its bulk flowed over the poor man, damping his struggles and covering him like a cloak. Jeffy cried out furiously from his cell, but nobody answered, nobody cared; most of the staff were down on the waterfront with their girls.

When the thing slid off the chief warder he was dead. The hot wind trifled with his moustache. The thing grew fingers and expertly removed the ring of keys from the dead man's belt. A segment of it then detached itself from the main bulk of the thing, which remained in the shadows, and scampered across the yard with the keys. It looked like an animated stool.

"My God!" Jeffy said, "it's coming here."

As he backed away from the window to his cell door, the creature, with one bound, appeared between the bars and dropped the keys into the cell. It jumped in after them.

Bit by bit, more of the thing arrived, dropping down before Jeffy's petrified gaze and finally building into—Gerund, or an intolerable replica of him.

Gerund put out a hand and touched his servant, almost as if he were experimenting.

"It's all right, Jeffy," he said at last, speaking with obvious effort. "You have nothing to fear. Take these keys, unlock your cell door and come with me up to the governor of the prison."

Grey in the face, shaking like a leaf, Jeffy managed to pull himself together enough to obey. The keys rattling in his hand, he tried them in the lock one by one until he found the key which fitted. Like a man mesmerised, he led the way into the corridor.

Nobody was about. At one point a warder slept in a tipped-back chair, his heels resting high above his head on the whitewashed wall. They did not disturb him. They unlocked the big, barred door at the foot of the private staircase and so ascended into the governor's flat. Open doors showed them the way to a balcony overlooking the bay and the central peaks of the island.

On the balcony, alone as usual, drinking wine as usual, a man sat in a wicker chair. He looked small and—yes, alas!—infinitely tired.

"Are you the prison governor?" Gerund asked.

"I am," I said.

He looked at me for a long while. I could tell then that he was not—what shall I say?—not an ordinary human. He looked what he was: a forgery of a human being. Even so, I recognised him as Gerund Gyres from the photographs the police had circulated.

"Will you both take a chair?" I asked. "It fatigues me to see you standing."

Neither servant nor master moved.

"Why have you—how have you released your man?" I asked.

"I brought him before you," Gerund said, "so that you may hear what I have to say, and so that you may know that Jeffy is a good servant, has never done me harm and must be released forthwith."

So, this was a reasonable creature which had compassion. Human or no, it was something I could talk to. So many men with whom I have to deal have neither reason nor compassion.

"I am prepared to listen," I said, pouring myself more wine. "As you see, I have little else to do."

Whereupon Gerund began to tell me everything I have now set down here to the best of my ability. Jeffy and I listened in silence; though the bond-man undoubtedly understood little, I grasped quite enough to make my insides turn cold.

In the quiet which fell when he had finished, we heard the sunset angelus ringing out from a Praia steeple; it brought me no anodyne, and the hard, hot wind carried its notes away. I knew already that a darkness was falling which no prayers would lighten.

"So then," I said, finding my voice. "As governor, the first point I must make is that you, Gerund Gyres, as I must call you, have committed murder: on your admission, you killed my chief warder."

"That was an error," Gerund said. "You must realise that I—who am a composite of Jean Regard, Cyro Gyres and Gerund Gyres, to say nothing of the numerous fish absorbed on my swim up from the sub-port—I believed I could absorb any human. It would not be death; we are alive. But your warder defied absorption. So did Jeffy, here, when I touched him."

"Why do you think that is?" I asked.

He grew a smile on his face. I averted my eyes from it.

"We learn fast," he said. "We cannot absorb humans who are not conscious of themselves as part of the process of nature. If they just cling to the outmoded idea of man as a species apart, their cells are antagonistic to ours and absorption will not take place."

"In fact, you can only—er, absorb a cultured man?" I asked.

"Exactly. With animals it is different: their consciousness is only a natural process. They offer us no obstacle."

I believe it was at this point that Jeffy jumped over the balcony rail into the bushes below. He picked himself up unhurt, and we watched his massive frame dwindle down the road as he ran away. Neither of us spoke; I hoped he might go to bring help, but if Gerund thought of that he gave no sign.

"So then," I said, trying to play for time, "you are the next evolutionary step as predicted by Pamlira in his book 'Paraevolution'?"

"Roughly speaking, yes," he said. "I have the total awareness Pamlira spoke of. Each of my cells has that gift; therefore I am independent of fixed form, that brand of every multi-celled creature before me."

I shook my head.

"You seem to me not an advance but a retrogression," I said. "Man is, after all, a complex gene-castle: you are saying you can turn into single cells; but single cells are very early forms of life."

"All my cells are *aware*," he said emphatically. "That's the difference. Genes built themselves into cells and cells into the gene-castles called man in order to develop *their* potentialities, not man's. The idea of man's being able to develop was purely an anthropomorphic concept. Now the cells have finished with this shape called man; they have exhausted its possibilities and are going on to something else."

To this there seemed nothing to say, so I sat quietly, sipping my drink and watching the shadows grow, spreading from the mountains out to sea.

"Have you nothing else to ask me?" Gerund enquired, almost with puzzlement in his voice. You hardly expect to hear a monster sounding puzzled.

"Yes," I said. "Are you happy?"

The silence, like the shadows, extended itself towards the horizon.

"I mean," I amplified, "if I had a hand in modelling a new species, I'd try and make something more capable of happiness than man. The more intelligent a man is, the more open he is to doubt; conversely, the bigger fool he is, the more likely he is to be content with his lot. So I'm asking, are you, you new species, happy?"

"Yes," Gerund said positively. "As yet I am only three people: Regard, Cyro, Gerund. The last two have struggled for years for full integration—as do all human couples—and now have found it, a fuller integration than they dreamed of before. What humans instinctively seek, we instinctively have; we are the completion of a trend. We can never be anything but happy, no matter how many people we absorb."

Keeping my voice steady, I said, "You'd better start absorbing me then, since that must be what you intend."

"Eventually all human cells will come under the new régime," Gerund said. "But first the word of what is happening must be spread to make people receptive to us. Everyone must know, so that we can carry out the absorption process. That is your duty. You are a civilised man, governor; you must write to Pamlira for a start."

He paused. Three cars swept up the road and turned in at the main gate of the prison. Jeffy, then, had had enough intelligence to go for help.

"Supposing I will not aid you?" I asked. "Why should I hurry man's extinction? Supposing I acquaint the World Force

with the truth, and get them to blow this whole island to bits? It would be a simple—get out!—a simple matter—confound it!”

We were suddenly surrounded by butterflies. In brushing them impatiently away, I had knocked over my bottle of wine. The air was full of butterflies, fluttering round us like paper; the darkening sky was thick with them.

“What is this?” Gerund spluttered. For the first time, I saw him out of shape, as he grew another attachment to wave the dainty creatures away. I can only say I was nauseated.

“As a creature so aware of nature,” I said, “you should enjoy this spectacle. These are Painted Lady butterflies, blown in thousands off their migratory tracks. We get them here most years. This hot wind, which we call the Harmatan, carries them across the ocean from Africa.”

Now I could hear people running up the stairs. They would be able to deal suitably with this creature. I continued, speaking more loudly, so that if possible he would be taken unawares, “it’s not entirely a misfortune for the butterflies. There are so many of them, no doubt they have eaten most of their food on the mainland and would have starved had they not been carried here by the wind. An admirable example of nature looking after its own.”

Admirable!” he echoed. I could scarcely see him for bright wings. The rescue party was in the next room. They burst out with Jeffy at their head, carrying atomic weapons.

“There he is,” I shouted.

But he was not there. Regard-Cyro-Gerund had gone. Taking a tip from the Painted Ladies, he had split into a thousand units, volplaning away on the breeze, safely, invincibly.

So I come to what is really not the end but the beginning of the story. Already a decade has passed since the events in the Cape Verde islands. What did I do? Well, I did nothing; I neither wrote to Pamlira nor called World Force. With the marvellous adaptability of my species, I managed in a day or two to persuade myself that “Gerund” would never succeed, or that somehow or other he had misinterpreted what was happening to him. And so, year by year, I hear the reports of the human race growing fewer and I think, “Well, anyway they’re happy,” and I sit up here on my balcony and let the sea breezes blow on me and drink my wine.

And why not? When Nature passes a law it cannot be repealed; for her prisoners there is no escape. So I sit tight and take another drink. There is only one proper way to become extinct: with dignity.

BRIAN W. ALDISS

P.S.

*At the end of life, with human friendships few and far between,
that alien friend was more precious than ever in the past*

He was elderly, dapper and dignified; a trim figure from his polished shoes to his small, neatly clipped beard. One could think of him as a retired orchestral conductor or perhaps a college don grown old along with the oaks around the campus.

Most obviously he was enjoying an eventide stroll with the observant leisureliness of the aged, sharing the shouts of children, the chirpings of sparrows, the tender hand-claspings of lovers, the makings of life. He was bathing in the human mainstream as he'd done continuously in days of yore. And he was gaining some compensation for the lack of those closer ones who through the years had slipped away suddenly, silently, like fugitives in the night.

So his clear blue eyes noted with total tolerance the sweaty, collarless men squatting on front doorsteps, the blowsy women bawling out hordes of kids, a swarthy and apologetic street vendor, a disillusioned cop brooding on a corner, a half-witted crone moping from a dirty window.

It was a squalid, overcrowded, delinquent district that still he visited from time to time no matter where else he went. Once upon a time it had been his area, wholly and entirely his, and that gave him a sort of proprietary interest in it. Every dilapidated street and every scruffy neglected house was known to him upstairs and down-

stairs. He had visited them all, time and again, bearing a little bag.

In the earliest days the police had walked warily around these parts, expecting trouble and usually finding it. He'd never had the slightest need to do so. Nobody had ever obstructed his passage, no hoodlum had ever slugged him, no juvenile thief had snatched his little black bag and raced away down an alley. One and all had granted him the freedom of the slum, respectfully saluting him with the same words.

"Evening, Doc!"

For more than forty years his surgery had been down that very side-street, amid the weak and the strong, the sober and the sodden. There he had suffered all their demands and idiosyncrasies with patient understanding.

The irate bellowings of men with nagging wives and peptic ulcers; the yipping and yapping of prolapsed women; the shrill, hysterical voices of martyrs to the menopause; the dreary wail of teething children and the imperative yelpings of those who were bursting to wee-wee; the suspicious acerbities of tapeworm-owners; the pallid complainings of subjects of hysterectomy; the hints, insinuations and implications of bitter virgins; the imbecilic interjections of the unaborted; the braggings of the turgid and the bumbblings of the boozy; the flow and counterflow of spite, accusation and abuse: all this cacophony had beaten upon his expert ears and been reduced to symptoms that were for him to assuage as best he could and by any means to hand.

Twelve years ago, upon his retirement, the torrent had diverted itself to another and younger man. The stream was the same but the waters were not. The old had gone to a better world, the young to better places and their vacant homes had been filled by others from somewhere still less fortunate, less opportune. Today it was seldom indeed that he saw a familiar face, rarely that somebody stopped, stared and spoke.

"Why, hello, Doc! How're you doing these days?"

That was the penalty of being seventy-seven. One must bid farewell person by person to those who have been part of one's existence. One must seek solace in the places with which they were associated and cling to the few who still remain.

Despite its bitter reminder of absences he loved to explore this well-known locality. He enjoyed the rawness of life within it, the spawnings and brawlings of humanity fermenting like yeast. He liked these things because this was now the only area untouched by modernistic schemers and planners. All other similar districts had

succumbed to the cordite stick and the bulldozer before being reborn in garish freshness. Even this one was doomed ultimately to become a civic helicopter park white with concrete and windy with whirling vanes. But so long as it stayed the same as it had always been so long would he embrace it as a surviving part of his life from which so many parts already had been withdrawn.

These were the days when like every man born of woman he had to face the final challenge, namely, that of gaining new strength from the same source whence it had been poured so liberally and so long.

"Physician, heal thyself."

It couldn't be done.

As always, he turned up Bleeker Street and made his way to Silvio Musitano's tiny coffee shop. It was not that he needed coffee; his real thirst was for the shop and, of course, Silvio. They were milestones to be rested against in peace and contentment.

Seemed only yesterday when he had rolled out of bed and followed an agitated Pietro Musitano along moonlit, cat-ridden streets. Through a paintless and creaky door. Up worn, carpetless stairs. Into a fusty room where Mama was having her rhythms and calling upon Holy Mary.

"Hot water, please. Now, now, don't let it worry you. It's a perfectly natural process and everything's going fine. Think how proud you're going to be mighty soon."

Then a little later, "Congratulations, signora. A big and beautiful boy. A bambino with a voice like Caruso's."

That had been Silvio.

He went into the shop. It looked the same. Every time he entered he thanked God for its sameness; it spoke of years that never pass and a world that does not change. He knew that it spoke falsely but he valued the illusion and wished to preserve it to the very last. When the future has grown very small one must find compensation in a past that is large.

Silvio appeared at the sound of the doorbell. His plump, olive-coloured face grinned widely, showing even teeth. He did not hurry forward with his accustomed eagerness, brushing a table with his apron and gesturing extravagantly while pouring forth a torrent of words. Instead, he registered excitement, turned to face the back room from which he had emerged and bellowed.

"Jeem! Jeem! Come see who is here!"

The sound of a chair scraping backward. Firm feet advancing almost with military tread. A tall figure appeared in the doorway,

grey eyes quizzical. The newcomer had fresh, unlined features and vividly red hair. He wore a trimly tailored dark green uniform with silver buttons, silver epaulettes and the comet insignia of the Space Service gleaming on his chest.

He paused a moment while Silvio watched his face with happy expectancy. Then slowly he advanced, his eyes registering incredulity.

"Doctor Harrison, as I live and breathe!"

Finding his spectacles, the doctor put them on and studied the speaker with care.

"You have the advantage of me, sir."

"That makes it quits. The advantage was yours when I was four years old and you caught me parading down the street in the nude. Your hand was swift and heavy those days."

"Jim Corlett!" He took off the glasses, put them on again, was momentarily bewildered. "The last time I saw you you were only so high." He put out a hand at random.

"Not quite *that* small," laughed Corlett. "I was fifteen when I left these parts."

"It was a long time ago, a long, long time," said Doc Harrison. He took a chair, signed the other to do the same. "Two coffees, Silvio." Then he smiled across the table. "Well, well, young Jim Corlett. One of my ghosts returned to earth."

"I'd make a rather substantial spook. I'm putting on weight."

"It will do you no harm to have a little more flesh. You look as fit as a man can be."

"In the Space Service one has to be fit."

"I'm sure. How d'you like it?"

"Suits me fine—though once in a while I think it has its drawbacks."

"In what way?" Doc Harrison prompted.

"No home, wife or family. I have just returned from a trip taking seventeen years. The next one may last equally as long or perhaps longer. What wife would stand for that?"

"Dear me! It certainly is a problem." Taking his cup, he thanked Silvio, sipped thoughtfully. "So now you're trying to refresh memories of bygone days. It seems that we're both in the same fix."

"Mine won't last long. I leave tomorrow. The ship blasts off at dawn."

"Indeed? So soon?"

"I've had three months on Earth," Corlett informed. "Spent

most of the time studying for an examination held last Thursday. If I've passed I'll have qualified as a ship's commander. Since then I've been trying to trace old friends."

"And finding them?"

"Some," admitted Corlett. "Not as many as I'd hoped. With Silvio I reached the end of the list. And I'm truly happy to meet you again. Frankly, I hadn't expected to do so."

"Thinking I'd be dead?"

Jim Corlett looked uncomfortable. "Well, when one has been away a good many years one expects a few losses."

"Would you have considered me a loss?"

"Certainly."

"That is extremely kind of you," said the doctor. "In return I can only say that I've numbered you among my own losses for a long time."

"Oh, don't tell me that. I was nobody in particular. I was just a local kid."

"The world is not made of dirt no matter what the geologists may say. The world is composed of people."

For a little while Corlett was silent, thoughtful, then agreed, "I guess you're right."

The other leaned forward. "Let's not indulge in morbid talk about the empty places in our lives—tell me about the full ones in yours."

"Hah! I tried that once. I was a prize flop."

"How do you mean?"

"I traced a college friend and looked him up. He was married, bald and had twin boys aged about ten or eleven. He exhibited me to them as if I were the only original space-rover but they weren't the least bit impressed. So I started telling them about Sartur which is far and away the most important planet I've visited. The kids sniffed their disdain. They knew more about Sartur than I did, having seen it repeatedly on the stereop screens."

"To all intents and purposes any place picked upon by the stereop technicians becomes as good as next door," Doc Harrison contributed. "I have roamed the cosmos myself in a two-dollar seat a hundred yards from my flat."

"Not much use me saying anything then, is there?" asked Corlett lugubriously.

"How about the lesser known, relatively untouched places? You must have been to some of those."

"A few. They're unimportant."

"Why?"

Corlett shrugged. "They lack natural resources to exploit. They're devoid of anything worthy of development. We landed on several for fresh food, water and exercise, then blasted away." He was meditative awhile before he went on, "I suppose that from the view point of a few generations ago the biggest disappointments of space conquest have been the number of completely uninteresting worlds and the total lack of bug-eyed monsters. As you know, the great majority of sentient lifeforms are more or less like us: the margin by which they vary is not great. The number of really weird types encountered so far can be numbered on the fingers of one hand."

"Have you met any of those?"

"Oh, yes. On Reba, for instance——"

"Reba?" Doc Harrison's coffee slopped into his saucer.

"Don't tell me you've actually heard of that dump," said Corlett, openly surprised.

The other recovered, murmured, "The name seemed familiar. I must have come across it somewhere. Carry on and tell me about it."

"Earth-mass, misty, marshy and distant from all trade routes," Corlett obliged. "It is visited by a missionary ship regularly every six months. Its human population numbers exactly one: a character called Father Joseph. He belongs to one of those small, obscure religious sects that doesn't know when it's beaten."

"You mean he has made no converts?"

"He hasn't the vaguest notion whether he's made any or not. His predecessor taught many of the natives to read and write in our language but how far they've progressed theologically is anyone's guess."

"This interests me greatly," assured his listener.

"The trouble is that the Rebans are not remotely human," Corlett continued. "That they have some sort of intelligence cannot be denied but we can find no satisfactory yardstick with which to measure it. For myself, I prefer to think they're not so hot."

"Why?"

"They repel me. They look lousy. Father Joseph must have the mind of a martyr to have lived among them so long. I'm afraid I'm much too fastidious ever to follow his example. It would be like voluntarily existing in a leper colony."

Taking a deep breath, the doctor asked quietly, "Just what is wrong with these Rebans?"

"I don't know how a biologist would classify them but they seem

to me more like odious plants or fungi than anything else. Give me real flesh and blood every time. They're about eighteen inches high, grey-green and knobbly. They can haul up their roots and totter around like drunkards for a little while before they have to bury their feet again. No eyes, ears or mouths. No faces, no expressions and presumably no souls. The first time you see them they turn your stomach."

Waving away a proffered cigarette, the doctor asked in still more subdued tones, "How does this missionary communicate with them?"

"Easily enough. The Rebans have esp and are telepathic. One only has to think at them conversationally and they write their responses. They read books by esping them. I have seen one hold a pen in a dozen fibres like long hairs and make an accurate copy of what it had no eyes to see."

"It?"

"Yes—they're sexless."

"You amaze me," said Doc Harrison. "How do they propagate?"

"I'm not very sure about this," confessed Corlett, "because I got it secondhand. It is said that whenever the urge comes upon them they send a long fibre through the earth. When it reaches a favourable growing-place the fibre develops a nodule which eventually sprouts and becomes another Reban. The result, of course, is that they cluster in patches like weeds."

"We cluster in patches—only we call them nations."

Ignoring that, Corlett added, "I was there only two days. It was two days too long. How those Rebans stank!"

"They smelled?"

"To high heaven."

"Of what?"

"There aren't words adequate to describe it. Something like rotting seaweed only worse. The mere remembrance of it can put me off my food even now." He thrust a hand into his jacket pocket. "I took a photograph on that godforsaken planet and it was the first time a camera had been used there. It shows Father Joseph with half a dozen of his flock." Extracting his wallet, he pawed through it, found what he was seeking and handed it across. "See them for yourself. Add the foulest odour you can imagine and you'll get a rough idea of what Rebans are like." Bending forward he read the names on the back of the picture Doc Harrison was holding. "Left to right: Missim, Kataran, Yöbitso, Father Joseph, Vand-a-

shanda——" His voice broke off and he stared in surprise. "Why, what's the matter, Doc?"

"Nothing, my boy, nothing." Handing back the photograph and gaining his feet, Doctor Harrison took his hat from its hook and smiled wearily. "At my decrepit age one becomes subject to sudden spells of exhaustion. One overestimates one's stamina and goes running recklessly around until Nature cries a halt. Pardon me. I really think I should be home."

"Take care of yourself," advised Corlett, showing quick concern. Accompanying him to the door, he shook hands. "It has given me a great lift to see you again."

"Thank you, Jim. You are very kind. I shall remember this meeting with pleasure when you are far out among the stars."

Head erect, his gait sedate, Doc Harrison set off down the street. But his mind was whirling.

To see a Reban would turn your stomach. Words can't describe how they stink.

Corlett watched him until he passed from sight, then went inside and said to Silvio, "I'm glad I met the old fellow. Chances are heavily against him being here next time I return."

"The doctor is a fine man," responded Silvio solemnly. "I and my Maria, we pray that he will live forever."

Back in his flat Doc Harrison slumped into his ancient armchair, gazed long and absently at the yellow-faced clock upon the opposite wall. Tick-tick-tick: the seconds that became minutes and weeks and months and years.

Comparatively young folk like Jim Corlett and Silvio featured only in the latter half of his life. It was the far fewer older ones who made the whole of it. And as the old ones stole away into nothingness it was like threads being withdrawn from his fabric until the entire weft and woof became loose.

Petula's death six years ago had been the greatest blow. A man's wife is half his life, once gone never to be regained. So much more to be treasured was the little still left of his world-of-persons.

This evening, in all innocence, Jim Corlett had tried to tear away the longest and most precious remaining thread, a golden cord that stretched unbroken all the way back to his boyhood. There was no other thread existing today that had been treasured so much and for so long a time.

To deprive him of it now would be a psychic murder.
Senseless killing.

A bit more of himself would die with it. Too many bits already had died—because people are part of one's self.

Had Corlett succeeded?

He did not know. He could not tell. The shock of his shattered dream was too recent to permit more than confused contemplation of the fragments.

The pieces were facts, hard, cold facts that glowed in his mind like neon lights. The Rebans were hopelessly non-human. They stank. They looked like hell. Those were the facts. The camera cannot distort beyond all reason and he had seen its impartial record.

Gaily was *it* and not *she*. A mere fungoid thing. A foolish figment of his first childhood nursed and cosseted into his second childhood. The imaginary angel of an incurable sentimentalist. A long-held delusion now blasted apart and dissipated in foul smoke.

Destructive truths. With what can one oppose truths? Nothing, nothing—except, perhaps, other and greater truths.

Were there any such?

Yes!

Crossing the room he found a large box-file, brought it to his chair, opened it and examined the evidence. The letters therein lay in chronological order and were carefully preserved.

The topmost missive, slightly yellowed, was dated sixty-five years ago and came from an outfit calling itself the Terran Institute for Transcosmic Relations. It acknowledged receipt of his entry in a schoolkid competition called the Grab Bag, warned him that the number of competitors was so large that the proportion of winners would be very small, but ended by hoping he'd be lucky.

Letter number two, dated four months later, came from the same source and notified that he was among the few fortunate ones. He had drawn a transcosmic pen-pal. The name was Vandrashanda, the address on Reba, an isolated planet of which nobody seemed to have heard. He could write via the T.I.T.R., as soon and as often as he wished.

How his schoolmates had envied him. The whole seven hundred of them had sent in their names. Of these, only four had dug a star-friend out of the Grab Bag.

With what excitement he had scrawled a dozen pages of juvenile babblings and mailed them to Vandrashanda. With what impatience had he awaited the slow-coming reply. And when finally it arrived it had proved a great disappointment.

"Oh, so help me, a blessed girl!"

Using queer, stilted English, the letter was inscribed in an

obviously feminine hand. Its contents made no reference to the writer's sex but anyone—even a boy—could tell from the script and from characteristic modes of expression that it came from a girl.

He had then been at the age when girls were nuisances barely to be tolerated. For the next few years the correspondence had been no more than perfunctory and, so far as he was concerned, motivated mostly by his desire for rare space-mail stamps that could be bartered for things more intensely coveted.

Eventually he had speeded up and become more voluble as his maturing mind began to find female company less burdensome, in fact somewhat pleasing. Vandrashanda had responded with friendly warmth and rapidly improving English. She had always responded to his every change of mood and character, always, always. And so it had gone on year after year, a happy routine that never moved from its strictly platonic basis, with letters arriving in small bunches every eighteen or twenty months.

At one time she had asked him what Malcolm Harrison signified. The question had baffled him. The only satisfactory answer he could think up was to call it Malcolm, the son of Harry. But back she had come with a request for the meanings of Malcolm and Harry. They have no meanings, he'd told her. They are just names, mere names. Anyway, what does your name mean?

She had a ready answer to that one: in his own language Vandrashanda meant Gaily or Joyous. How lovely, he'd thought—and from that day onward, through the long passage of years, his letters began "Dear Gaily" while hers started with "Dear Malcolm".

When in his thirty-first year he met and courted Petula she soon discovered that this creature among the stars was, in effect, another woman in his life. Or at any rate an entity sufficiently womanlike to make no matter. Conscious of the enormous gulf of space between her and this mental rival Petula had consistently treated the situation with amused tolerance, contenting herself with occasional references to "Malcolm's maiden in the Milky Way".

As for Gaily, she had never been able to make head or tail of what was going on just then.

"I am soon to be married."

"What does married mean?"

"It is an arrangement whereby two people agree to share each other's lives."

"How strange, Malcolm. We have no need of that here. We all live together. Will it make you happy?"

"Very happy."

"Then I am glad for you."

There had been no children though Petula would much have liked one or two. If the fates had blessed them with a daughter would Petula have been willing to name her Gaily? Possibly. She had never been a jealous or spiteful partner. On the contrary, she was the kind who'd pander to his boyhood dreams, believing him still a boy at heart.

"Men never grow up."

When Petula passed away he had poured out his grief to Gaily. Knowing nothing of marriage she could not be expected to appreciate the tremendous blow he'd suffered. But she had remembered his happiness at the beginning, deduced corresponding unhappiness with the ending. Moreover, she was extremely sensitive to his feelings. So she had written back with long, warming phrases of comfort and sympathy.

He had now reached the bottom of the box. The last letter was almost a year old. Now that he had been driven to review them in bulk he realized openly something formerly sensed only sub-consciously. It was a phenomenon that rang an alarm-bell in the depths of his mind.

Through the many, many years the missives displayed precisely the same subtle changes that were visible in his own letters to her. Her first ones were childish and eager. Then they became girlish and self-conscious. The midtime ones were womanly and grew increasingly sophisticated. The last ones were matronly. With a sudden twinge of fear he knew he'd failed to ask Jim Corlett an all-important question.

"How long do they live?"

Perhaps she had grown old just as he had grown old. Perhaps he'd become an essential part of her latter days in the same way that she was part of his. She had given him companionship without stint and surely he could give her no less. What would it mean to her if some day she should send him a letter and get no reply—ever?

Facts were in violent collision with facts. The self-evident truths in these letters diametrically opposed the manifest truths of Corlett and his camera.

The former said that for more than five-sixths of his existence he had shared a tiny portion of his life with Gaily, a woman of some strange, other-worldly kind but nonetheless part of the eternal feminine. The latter brutally insisted that he had been swapping idle gossip with a neuter named Vandrashanda, a stinking fungus.

For a long time he strove to consider this mutual contradiction

as if it were a major and unsolvable problem. Yet he could not treat it thus. Something deep in his heart or his mind stubbornly insisted that there was no problem at all, that the issue had been decided a couple of hours ago in Silvio's cafe.

The camera had not lied. Corlett had not spoken falsely. Both had revealed what they were able to see.

What they were *not* able to see lay before him in a stack of intensely human missives.

And the true test of the civilised mind is that it should be able to weigh spiritual values without including the package.

Gaily was real!

He almost shouted it.

Pen and paper lay to hand. He wrote far into the night, the longest period he'd ever done for her.

The last paragraph said in tones of an afterthought, "I met Jim Corlett, a friend of my youth who is now a space-officer. He had visited Reba and told me all about it as seen through an Earthman's eyes. You will remember him taking a picture of several of you with Father Joseph. I studied that picture and will try to get a copy to keep on my desk. It is impossible to describe my delight at seeing you for the first time."

Finishing, he addressed the envelope, fixed expensive space-mail stamps, then carefully re-read the pages to make sure they would please her. Before folding and sealing in readiness to mail he took up his pen and added one line.

"P.S. I think you are most beautiful."

ERIC FRANK RUSSELL



Nothing for My Noon Meal

In the darkness of this lonely little planet the unbelievable had happened . . . and suddenly there was new hope for the millions on Earth

Illustrated by John J. Greengrass

There was a patch of Fluhs growing out beyond the spikes, and I tried to cultivate them, and bring them around, but somehow they weren't drawing enough, and they died off before they could mature. I needed that air, too. My sac was nearly half-empty. My head was starting to hurt again. It had been night for three months at that time.

My world is a small one. Not large enough to hold an atmosphere any normal Earthman could breathe, not small enough to have none and be totally airless. My world is the sole planet of a red sun, and it has two moons, each one of which serves to eclipse my world's sun for six of the eighteen months. I have light for six months, dark for twelve. I call my world Hell.

When I first came here, I had a name, and I had a face and I even had a wife. My wife died when the ship blew up, and my name died slowly over the ten years I have lived here, and my face—well, the less I remember that, the easier it is for me.

Oh, I don't complain. It hasn't been easy here for me, but I've managed, and what can I say? I'm here and I'm alive as best I can be here, and what there is, there is. But what there is not, is greater than mere complaining could bring back.

The first time I saw my world it was as a small egg of light in the plot tank on the ship I shared with my wife. "Do you think that has anything for us?" I asked her.

At first it was good to remember her, for when I did, a sweetness came to me, burning away my tears and my hate. At first. "I don't know, Tom, maybe." That was what she said. "Maybe." That was the sweet word, the way she said it. She always had a soft blonde way of saying maybe that made me want to wonder.

"The ore hold could do with something to chew on," I gibed, and she smiled with her full lips and her teeth that gently nuzzled her lower lip. "Have to pay for these damn honeymoons of yours somehow."

I kissed her playfully, for we were often happy like that; simply happy, by being together. Together. What that meant to me, I never quite knew, happy as I was. So simple was our enjoyment of one another, that it never struck me how it could be with her gone.

Then we passed through that fog of sub-atomic particles that float beyond the orbit of Firstmoon, and though they did not register on the tank, they were there and they were here and gone. Leaving in their wake a million tiny invisible holes in the hull of the ship. The holes would not have leaked enough air in a month to cause my wife or myself any discomfort, but they had pierced the drive chambers, also. The particles were not rock, but something else, perhaps even contra-terrene, and what they did to the drive chambers I will never know. For the ship lost power and slewed off toward this, my world, and miles above the surface they exploded.

My wife died, then, and I saw her body as I was whirled away in the safety section of the cab. I was safe, with great tanks of oxygen strapped to my hutch, and my wife was still there in the companionway between the metal walls. In the companionway

between the galley and the cab, where she had gone to prepare me coffee.

She was still there, her arms outstretched to me, her skin quite blue—excuse me, it, it hurts still—as I was whirled away and down. I saw her that once.

My world is a harsh world. No clouds fleece its twelve-month black skies. No water runs across its surface. But then, water is no problem for me. I have the circulator, which takes my refuse, and turns it into drinkable water. There is a strong iron taste to the recirculated water, but that doesn't bother me too much.

It's the air that I have trouble getting. At least that was the case before I discovered the Fluhs had what I needed. I'll tell you about it, and about what has happened to my face; I'm frightened.

Of course I had to live.

Not at all because I wanted to live; when you have been a space bum as long as me, and nothing to moor you to one rock, and then along comes a woman who dips up life in her eyes and hands and does it all for you—and then she is taken away so quickly

But I had to live. Simply because I had air in the cab, and a pressure-suit and food and the circulator. I could subsist on these for quite a while.

So I lived on Hell.

I woke and went through enough hours of nothingness to make me weary, and then I slept again, and woke when my dreams grew too crimson and too loud, repeating the tracks of the "day" before. Soon I grew bored with my life in the cab, close and solitary as it was, and decided to take a walk on the surface of this world.

I slipped into my air-suit, not bothering to put on the pressure shell. There was barely enough gravity on the planet to keep me comfortable, though occasionally I got stiff pains in my chest. And with the heating circuits pressed into the material of the air-suit, I was in no real danger. I strapped the oxygen unit to my back, and slipped the bubble onto the yoke, dogging it down over my head with ease. Then I inserted the hose between oxygen unit and bubble and sealed it tightly with a wrench, so I would lose no air from leakage.

Then I went out.

It was twilight, as the sky dimmed on Hell. I had had three months of light already, since I had landed in the safety hutch, and I assumed perhaps two months of light had passed before I

came. That left me with a month, roughly, before Secondmoon slipped completely across the face of the tiny red sun which I had not named. Even now, Secondmoon was coming across its disc, and I knew it would be darkness for a full six months by that moon, then another six from Firstmoon, then light again for a brief six.

It had not been difficult to chart orbits and eclipse periods during the past three months. What else had I to do?

I started walking. It was difficult, and I found that by taking long hops, I could cover distances three times as quickly as if I had been on Earth.

The planet was nearly barren. No great forests, no streams or oceans, no plains with grain standing on them, no birds, and no other life but mine and—

When I first saw them, I was certain they were trumpet flowers, for they had the characteristic bell-shaped perianth with delicate stamen projecting slightly from the cup. But as I drew nearer I realized nothing so Earth-like—even in outward appearance—could occur here. These were not flowers, and on the spot, in the muffled breathing of my helmet, I called them Fluhs.

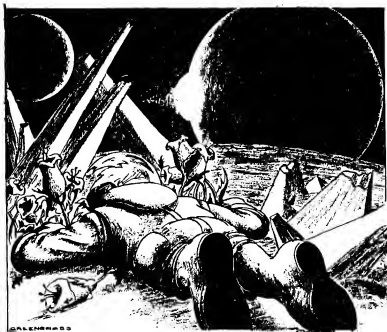
They were a brilliant orange on the outside of the bell, fading down into a bluish-orange and then a simple marine blue on the stem. Inside the cups they were not so orange as they seemed golden, and the blue of the pistils was topped by anthers of orange. Quite colourful they were, and pleasant to look upon.

There were perhaps a hundred of these plants, growing at the base of rock formations that were quite unnatural: tall and leaning at angles, and all smooth and sharp-edged, like spikes, flattened off at the tops. Not so much like rocks, but like the image of salt crystals or glass, under ultra-magnification. The entire area was covered with these formations, and with an instant's loss of reality, I seemed to see myself as a microscopic being, surrounded by great flat-edged, flat-topped crystals that were in reality merely dust or micro-specks.

Then my perspective returned, and I stepped closer to the Fluhs, to examine them more closely, for this was the only other life that had managed to exist on Hell, apparently, drawing sustenance from the thin, nitrogen-laden atmosphere.

I leaned over to stare deeper into the trumpet-blossoms, resting on one of the slanting pillars of pseudo-rock for support. That was one of my first mistakes, nearly fatal, and intended to colour my entire life on Hell.

The pillar crashed—it was a semi-porous volcanic formation,



almost scoria-like in composition—and loosened other rocks that had rested on it. I fell forward, directly atop the Fluhs, and the last thing I felt was my oxygen helmet shattering about my head.

Then the blackness that was not as deep as space slid down over me.

I should have been dead. There was no reason why I should not have been dead. But I was living; I was breathing! Can you understand that? I should have been with my wife, but I was alive.

My face was pressed into the Fluhs.
I was drawing oxygen from them.

I had stumbled and fallen and cracked open my helmet, and should have died, but because of strange plants that sucked the nitrogen from the thin atmosphere, circulated it and cast it back out as oxygen, I was still alive. I cursed the Fluhs for depriving me of quick, unknowing surcease. I had come so close to joining her, and had lost the chance. I wanted to stagger away from the Fluhs—out into the open where they could not give me life—and gasp away my stolen life. But something stopped me. I was never

a religious man, and I am not now. But there seemed to be something miraculous in what had happened. I can't explain it. I just *knew* there was a Chance that had thrown me down into that patch of Fluhs.

I lay there, breathing deeply.

There was a soft membrane around the base of the pistils, that must have held in the oxygen, allowing it to sift out slowly. They were intricate and wonderful plants.

and there was the smell of midnight.

I can't describe it any more clearly. It was not a sweet smell, nor was it a sour smell. It was a tender, almost fragile odour that reminded me of one midnight when I had first married her, and we were living in Minnesota. Crisp, and pure and uplifting that midnight had been, when our love had transcended even the restrictions of marriage, when we first realised we were more in love than in love with love itself. Does that sound foolish or confused? No, to me it was perfectly clear. And so was the smell of midnight from the Fluhs.

It was the smell perhaps, that made me go on living.

That, and the fact that my face had begun to drain.

As I lay there, I had time to think about what this meant: the bottleneck in oxygen lack is the brain. After five minutes of oxygen starvation, the brain is irreversibly damaged. But with these Fluhs, I could wander about my planet without a helmet—were I able to find them everywhere in such abundance.

As I lay there thinking, gathering strength for the run back to the ship, I felt my face draining. It was as though I had a great boil or pus-bag on my right cheek, and it was sucking blood down into it. I felt my cheek, and yes, even through the glove I could feel a swelling. I grew terrified then, and plucking a handful of Fluhs—close to the bottom of their stems—I thrust my face into them, and ran frantically back to the ship.

Once inside, the Fluhs wilted and falling down over my fist, they shriveled. Their brilliant colours faded, and they turned grey as brain matter. I threw them from me and they lay on the deck-plate for a few minutes before—they crumbled to a fine ash.

I pulled off my air-suit and my gloves, and ran to the circulator, for it was constructed of burnished plasteel, and my reflection lived there clearly. My right cheek was terribly inflamed. I gave a short, sharp squeal of terror and pawed at my face, but unlike a pimple or boil, there was no soreness, no pain. Just the constant draining feeling.

What was there to do? I waited.

In a week, the sac had taken shape almost completely. My face was like no human face, drawn down and puffed out on the right side so that my eye had been pulled into a mere slit of light shining through. It was like a gigantic goitre, but a goitre that was not on the neck, but the face. The sac ended just at the jawbone, and it did not impair my breathing a bit. But my mouth had been dragged down with it, and when I opened it, I found I had a great cavernous maw instead of the firm lips I had once known. Otherwise, my face was completely normal. I was a half-beast. My left side was normal, and my right was grotesquely pulled into a drooping, rubbery satire. I could not bear to look on myself for more than an instant or two, each "day." The flaming redness of it had gone away, as had the draining, and I did not understand it for many weeks.

Until I ventured once more onto the surface of Hell.

The helmet could not be repaired, of course, so I used the one that my wife had used when she was with me. That set me thinking again, and later, when I had steadied myself, and stopped crying, I went out.

It was inevitable that I should return to the spot where my deformity had first occurred. I made the spikes, as I had now named the rock formations, without event, and sat down among a patch of Fluhs. If I had drawn off their life-giving oxygen, they seemed no worse for it, for they had continued to grow in brilliance and were, if anything, even more beautiful.

I stared at them for a long time, trying to apply what smattering of knowledge I had about the physics and chemistry of life to what had happened. It was obvious, one thing at least: I had undergone a fantastic mutation.

A mutation that was essentially impossible from what Man knew of life and its construction. What might, under exaggerated conditions, have become a permanent mutation, through generations of special breeding, had happened to me almost overnight. I tried to reason it out:

Even on a molecular scale, structure is inextricably related to function. I considered the structure of proteins, for in that direction, I felt, lay at least a partial answer to my deformity.

Finally, I removed the helmet, and bent down to the Fluhs once ~~more~~. I sucked air from them, and this time felt a great

light-headedness. I continued drawing, first from one flower and then the next, till I knew. My sac was full. It all became reasonably clear to me, then. The smell of midnight. There was more than just odour there. I had assimilated bacteria from the Fluhs; bacteria that had attacked the stabilising enzymes in my breathing system. Viruses perhaps, or even rickettsiae, that had—for want of a clearer term—softened my proteins and re-shaped them to best allow me to make use of the Fluhs.

To allow me to oxygen-suck, as I had been doing, developing a bigger chest or larger lungs would have done me no good. But a balloon-like organ, capable of storing oxygen under pressure *that* was something else again. When I sucked from the plants, oxygen bled slowly from the blood haemoglobin into the storage sac, and after a while I would be oxygen-full.

I could then proceed without air for short periods, even as a camel can go without water for periods of greater duration. Of course I would have to have an occasional suck to restore what I had used up in between; in an emergency, I could go without for a long while, but then I would need a *long* suck to replace completely.

How it had occurred, down in the nucleoprotein level, I was not that much of a biochemist to understand. What I knew I knew by hypno-courses I had taken many years before in the Deimos University required courses. I knew these things, but had never studied enough to be able to analyse them. Given time and sufficient references, I was sure I could unravel the mystery, for unlike Earth scientists, who discounted almost-instantaneous mutation as a fantasy, I *had* to believe . . . for it had happened to me. I had only to feel my face, my puffed and now ballooned face to know it was true. So I had more to work with than they did.

At that moment, I realised I had been standing erect for some minutes, my face nowhere near the Fluhs. Yet I was breathing comfortably.

Yes, I had something to work with, where they did not, for I was living the nightmare fantasy they said was impossible.

That was six months ago. Now it is well into night, and judging from the way the Fluhs are dying, there will be nothing when light comes. Nothing left to breathe. Nothing for my noon meal.

It was so dark. The stars were too far off to care about Hell or what lived there. I should have known, of course. In the eternal

darkness of twelve months' night, the Fluhs die. They don't grey-ash as the ones I first picked did. No, instead they retreat into the ground. They grow smaller and smaller, as though they were a motion picture being run backward. They get tinier and finally disappear entirely. Whether they incyst themselves, or just die completely, I'll never know, for the ground is much too hard to dig in, and what little I've been able to scrape away, where the scoria-like formations extend onto the ground, reveals nothing but small holes where the blossoms descended.

My head was starting to hurt again, and my sac was emptying out all the faster, for my breathing—which I had learned to make shallow—was deepening with effort. I started back toward the ship.

It was many miles around the planet, for I had been living in caves and subsisting on the rations brought with me, for the past three "days". I had been trying to track down a thriving patch of Fluhs, not only to get oxygen to replenish my emptying sac, but to further study their strange metabolism. For my oxygen supply in the hutch was fast diminishing; something had gone broke in the system when I had landed—or perhaps the same particles that had caused the ship's reactors to explode, had caused invisible damage in the oxygen recirculator. I didn't know. But I did know I had to learn to live on what Hell could give me—or die.

It had been a difficult decision. I had wanted very much to die.

I was standing in the open, with the heated cowl of my air-suit grotesquely drawn about my head and sac, when I saw the flickering in the deep. It burned steadily for an instant, then continued to flicker, as it fell toward the tiny planet.

I realised almost at once that it was a ship. Unbelievable, unbelievable, but somehow, in some manner I could never understand, God had sent a ship to take me from this place. I started running, back towards my hutch, what was left of my ship.

I stumbled once, and fell, only to scramble along on all fours till I could get my balance. I continued running, and by the time I had reached the hutch, my sac was nearly empty, and my head was splitting. I got inside and dogged the lock, then leaned against it in exhaustion, drawing deeply, deeply for the air inside.

I turned toward the radio gear, even before the ache was gone from my head, and threw myself roughly into the plot-seat. I had almost forgotten how valuable the set could be; lost out here, so far over the Edge, I had never even given serious consideration to

the possibility of being found. Actually, had I stopped to consider, a visit was not so unbelievable after all; my ship had not exploded so very far off the trade routes. True, I was far out, but any number of circumstances could combine to bring another ship my way.

And they had.

And it had.

And it was.

I flipped on the beacon signal, and set it to all-bands, hearing the bdeep-bdeep-bdeep of it in the hutch, going out, I knew, to that ship circling the planet. That done, I turned slowly in the plot chair, hands on my knees—only to catch sight of myself in the burnished wall of the recirculator. I saw my sac, grotesque, monstrous, hideous, covered with a week's growth of spikey beard stubble, my mouth drawn down in a gash. I was hardly human any longer.

When they came, I would not open the lock for them.

Finally, I allowed them in. There were three of them, young, clean-limbed, trying to hide their horror at what I had changed into. They came in and stripped out of their bulky pressure-suits. The hutch was crowded, but the girl and one of the men squatted on the floor and the other man perched on the plot tank's edge.

"My name——" I didn't know whether to say "is" or "was" so I slurred it, easily, "Tom Van Horne. I've been here about four or five months, I'm not sure which."

One of the young men—he was staring at me frankly, he could not take his eyes off me, in fact—replied, "We belong to the Human Research Foundation. Expedition to evaluate some of the worlds out past the Edge for colonisation. We—we—saw the other half of your ship. There was a wom——"

I stopped him. "I know. My wife." They stared at the port, the deckplate, the bulkhead.

We talked for some time, and I could see they were interested in my theories of near-instantaneous mutation. It was their field, and soon the girl said, "Mr. Van Horne, you have stumbled on something terribly vital to us all. You *must* come back with us and help us to get to the heart of—of—your, uh, your change." She blushed, and it reminded me a little of my wife.

Then the other two started in. They used me as a buffer, asking questions and answering them, and making me warmer and warmer to the prospect of returning. I was caught up in a maelstrom

of enthusiasm. A feeling of belonging stole over me, and I forgot. I forgot how the ship had gone out like a match; I forgot how she had stood there frozen in the companionway, blue and strange; I forgot all the years I had spent bumming in space; I forgot the months here; and most of all I forgot the change.

They pleaded with me, and said we should go right now. I hesitated for an instant, not even knowing why, but sub-consciously crying to myself to not listen. Then I relented, and got into my air-suit. When I pulled the heated cowl up about my sac, they all stared for a long moment, until the girl nudged one of the fellows, and the other broke into a nervous titter.

They jollied me, telling me how important my discovery would be to mankind. I listened; I was wanted. It was good, so good, after what seemed an eternity on Hell.

We left my hutch, and started across the short space between their ship and my life cubicle. I was pleased and surprised to see how shining their ship was; they were proud of it, they took good care of it. They were the new breed—the high-strung, intelligent scientists with the youthful ideas and the glory in them. They weren't tired old folks like me. The ship was lighted by automatic floods that had come out on the hull, and the vessel shone in the night of Hell like a great glowing torch. It would be good aspace once more.

We came up to the ship, and one of the men depressed a stud that started a humming inside the ship. A landing ramp slid down from far above as the outer lock opened, and I knew this was a more recent model than my ship had been. But then, that didn't disturb me; I had been a poor space bum before I met her. She had been all the drive I'd ever needed.

I took a step forward, up the ramp, and two things happened, almost simultaneously:

I caught a glimpse of myself in the glowing shell of the ship. It was not a pretty picture. My ghoul's mouth, drawn down and to the side like a knife wound. My eye, a mere slit of brightness, the sac so hideous and vein-marked. I stopped on the ramp, with them directly behind me.

And the second thing happened.

I heard her.

Somewhere far off in a bright amber cavern hung down with scintillant stalactites swathed in a shimmering aura of goodness and cleanliness and hope younger than the next instant . . . radiantly beautiful and calling to me . . . calling with a



voice of music that was the sound of suns flaring and stars twinkling and earth moving and grass growing and small things being happy it was she!

I listened there for a moment that spanned forever.

My head tilted to the side, I listened, and I knew what she said was truth, so simple and so pure and so real, that I turned and edged past them on the ramp, and returned to Hell again.

Her voice stopped in the moment of my touching ground.

They stared at me, and for a short time they said nothing. Then one of the men—a short, blond fellow with alert blue eyes and hardly any neck—said, “What’s the matter?”

“I’m not going,” I said.

The girl ran down the ramp to me. “But why?” she cried.

I couldn’t tell her, of course. But she was so small, so sweet, and she reminded me of my wife, when I had first met her, so I answered, “I’ve been here too long; I’m not very nice to look at——”

“Oh——” and she tried to stop me, but it was a sob, so it did not interfere.

"—and you may not understand this but I—I've been well, content here. It's a hard world, and it's dark, but she's up there—" I looked toward the black sky of Hell, "—and I wouldn't want to go away and leave her alone. Can you understand that?"

They nodded slowly, and one of the men said, "But this is more than just you, Van Horne. This is a discovery that means a great deal to everyone on Earth.

"It's getting worse and worse there every year. With the new anti-agathic drugs, people just aren't dying, and they've still got the Catho-Prsybite Lobby to keep birth control laws from being enacted. The crowding is terrible; that's one of the chief reasons we're out here, to see how man can adapt to these worlds. Your discovery can aid us tremendously."

"And you said the Fluhs were gone," the other man said. "Without them, you'll die." I smiled at them; *she* had said something, something important about the Fluhs.

"I can still do some good," I replied quickly. "Send me a few young people. Let them come here, and we will study together. I can show them what I have found, and they can experiment here. Laboratory conditions could never match what I've found on Hell."

That seemed to do it. They looked at me sadly, and the girl agreed. The other two matched her agreement in a moment.

"And, and—I couldn't leave her here alone," I said again.

"Goodbye, Tom Van Horne," she said, and she pressed my hand between her mittened ones. It was a kiss on the cheek, but her helmet prevented it physically, so she clasped my hand.

Then they started up the ramp.

"What will you do for air, with the Fluhs gone?" one of the men asked, stopping halfway up.

"I'll be all right, I promise you. I'll be here when you return." They looked at me with doubt, but I smiled, and patted my sac, and they looked uncomfortable, and started up the ramp again.

"We'll be back. With others." The girl looked down at me. I waved, and they went inside. Then I loped back to the hutch, and watched them as they shattered the night with their fire and fury. When they were gone, I went outside, and stared up at the dim, so-faraway points of the dead stars.

Where she circled, up there, somewhere.

And I knew I would have something for my noon meal, and all the meals thereafter. She had told me; I suppose I knew it all along, but it hadn't registered, but she had told me: the Fluhs were

not dead. They had merely gone down to replenish their own oxygen supply from the planet itself, from the caves and porous openings where the rock trapped the air. They would be back again, long before I needed them.

The Fluhs would return.

And someday I would find her again, and it would be an unbroken time.

This world I had named, I had named not properly. Not Hell. Not Hell at all.

HARLAN ELLISON

Happy to Know You...

Commencing with the current issue, NEBULA is to be distributed much more widely in the U.S.A. than ever before and we should like to extend a hearty and sincere welcome to the many new readers who are now trying us out for the first time.

NEBULA regularly features new stories by all the top names in science fiction, backed by unusual and provocative features by well-known personalities in the field. No effort or expense is spared to make this magazine not only one of the best of its kind in the world today, but also one which is distinctive in policy and just that little bit different from the large number of comparable journals at present being published.

Naturally we are very interested to hear what our many new readers think of this and forthcoming issues of NEBULA and so, if you have a suggestion or a complaint to make, or would merely like to say "hello", write to us now and we will do our best to print or answer every letter received. Our editorial office is at 1 Kylepark Crescent, Uddingston, Glasgow, Scotland.

Training Area

A new approach was essential if the experiment was to succeed—a fact which Ed Jackson thought he could turn to his advantage

Illustrated by D. McKeown

Half way along the bare metal corridor, Ed Jackson halted. Beckner, Director of the Jupiter Diver Project, and Slipher, its psychologist, taken unawares, continued several paces before halting to look back anxiously at him.

"It's O.K.," he told them, "I'm not backing out." His bitter tone, like the padded "G" suit which encased him like a glove, seemed out of keeping with the youth of his thin, dark face. "But you're rushing me. We only just got here. Aren't you even going to let me look down at this training area of yours? Remember I've never seen Earth before."

The other two men exchanged glances.

Beckner hurried back, his ascetic features schooled, his words coming quickly. "It'll be quite an experience for you . . . different from looking down on Jupiter . . ." He spun a wheel set in the wall beside a sheet of glass.

As the cover lifted from the outside of the comparatively thin

glass of the porthole, Ed leaned forward, eyes shining, lips parted. Like a wonderful blue-green jewel, Earth—the little planet about which his mother had told him such enthusiastic stories—glowed out of a darkness pricked out with starry diamond points. To his surprise, however, the little planet's apparent diameter seemed as great as his recent memories of mighty Jupiter. But he was of course much nearer to Earth than he had ever been to the giant planet near his home.

"See the target area on the right of the disc?" asked Beckner, and added in an off-hand, almost bored tone like that used by some official guide, "It's not so long ago they were testing nuclear bombs there."

Ed nodded absently.

He was remembering another occasion a year ago, when he had wangled permission to take a girl into the observatory on Gannymede.

She had taken her eye away from the viewpiece of the telescope and turned, pouting. "Ed! It's only a sliver of blue-green light. There's nothing to get worked up about at all!"

"But that's Earth!" he had exclaimed, and scowled.

Women weren't romantic at all. They were much more materially minded creatures than men. He had rubbed one hand over his bristling, short hair and made an imploring, open-handed gesture with the other; but the boredom reflected on her plump but pretty face had cut off the further protests choking into his throat.

"Oh never mind!" he told her.

She put her blonde head on one side. "I can't see anything to make a fuss about in a mildewy crescent. Now, if you had any hope of ever going there, it would be different."

"Would it?" She was thinking, he supposed, of the great cities and the high society. As he faced her, he brooded over a world where men could walk without space-suits in real air; where green trees waved in natural winds and grass had grown before man had evolved; where streams purred down from watersheds covered with heather and bracken into deep rivers slowly running into seas and oceans where great waves were crested with white foam . . .

She was grinning at him! Her painted face was mocking his foolishness.

His desire for her—never very strong—faded into resentment. And in that moment he decided that he was going to see Earth and luxuriate in the depths of mankind's real atmospheric environment.

Like the girl with him he was in his late 'teens, having grown up as the first generation of humans born in the hard-working but only moderately prosperous communities on Jupiter's moons. He was a singularly determined young man.

In the weeks that followed, he gave up every one of the limited but expensive pleasures available to him. No smoking, no films or dances, and no girls. He saved . . . even though he realised that by half starving himself as well, it would be five long, Earth year periods of the only youth he would ever have before he could buy a ticket on one of the interplanetary freighters.

It was only natural that he looked for a way to reach his goal more quickly. Any way and every way was considered by his mind as his obsession grew instead of diminishing. He hoped some freighter would need an extra hand; but crewmen were two-a-penny. He even thought of stealing the little freighter rocket which he piloted for the Jupiter Company on irregular carrier services between the nine inhabited moons.

He went so far as to work out an orbit which his small supply of rocket fuel could give him. Inwards from Jupiter, through the Asteroids, past Mars to where Earth circled the Sun. But his little rocket could not carry the supplies he would need for such a six-month trip—and so long as that in free fall conditions would leave him so weakened that he would never be able to fend for himself on a world where gravity was so much greater than that which he was used to.

Then he had been given the job of taking the new psychologist to the artificial satellite from which the Diver Project was being operated.

Everyone said the pilots of the divers were committing suicide; but there was big money in it, and the Project needed replacement pilots—and the replacements would begin their special training by diving at Earth.

Beckner, elderly spaceman in charge, had not seemed too convinced by his arguments; but Slipher the new psycho had, at length, and with exaggerated reluctance, agreed to take him on.

That was months ago. Now he was actually here.

A few thousand miles above Earth.

Earth!

Ed glanced left at Beckner beside him and right at Slipher further away. They were breathing heavily. So, for that matter, was he.

"This glass isn't the new special stuff," said Beckner. "Seen enough for now?"

Ed nodded. One of the first things a child learnt on Jupiter's moons was what happened to soft human bodies which were exposed for too long to the harsh radiations of space—radiations which it was said were filtered out by the atmosphere of an Earthly planet.

While Beckner closed the port shield, Slipher edged back, timing his return with the shutting out of danger. "Jackson!" he said. "You're doing this because you think it would be wonderful to get down out of Space on to Earth, aren't you?"

"I——" Ed's gaze fell under the steel-blue gaze of the psychologist. He could have lied about anything else; but he had just seen his shining goal. "Yes! I want to be able to breathe air that has not been manufactured—and see trees growing in golden sunlight—and to work in a city that is roofed in only by a blue sky—" He bit off the outburst. To the others, who had been Earthborn, such admissions might seem laughable.

Slipher's eyebrows drew down. "A natural enough motivation for one born in the domed city of an airless moon. But do not forget your parents must have had good reasons for moving out into Space. Go and enjoy the glamour of Earth by all means—but don't forget your roots are out in the area controlled by the Jupiter Company."

"Stop lecturing him!" Beckner's tension made muscles work and jump all over his body. "Hasn't he enough to think about with the training descent?"

"Sorry. You are quite right." Slipher glanced at the scientist and then eyed Ed with his cold stare. "You aren't frightened, are you?"

"No!" Nothing would have induced Ed to admit to a hollow feeling in his stomach, to the quickened beat of his heart. "All your pilots did this, and lived, didn't they?" His lip curled. "I can do anything they've done—and maybe more!"

Beckner caught hold of his arm, and they resumed their approach to the launching chamber. Beads of sweat glistened on Beckner's taut face. "Don't forget, Ed, that there's always some danger. Remember the synchronised film we have added. Remember that we have tried to add to the reality of the dive for you, by synchronising the film taken by a pilotless diver with the movements of your own diver. You must not lose your head. In the oceanic trench near the Phillipine Islands, you'll reach a depth

of about 35,000 feet. You'll have something like a pressure of 1,000 atmospheres on the skin of your Jupiter Diver—quite enough to compress you to a sticky end if you jog the wrong switch even though it's not to be compared with the real thing."

"Don't I know—?"

Ed broke off, and all three looked back uneasily over their shoulders as a commotion sounded in the unloading bay through which they had come on their way from the rocket from Jupiter. Raised voices penetrated the metal door only as faint, distorted sounds.

"Sounds like a foreigner," commented Ed.

The others glanced at each other. "If it concerns us," said Slipher, "they'll let us know soon enough. We're strangers on this artificial moon."

"Time's getting short," said Beckner. "Everything must go on schedule."

He ducked through the hatch into the launching chamber.

As Ed followed, a feeling of unreality stole over him—a feeling which he had had once before, just prior to undergoing an operation. To his left, a man in immaculate green overalls stood before what must have been a control panel—but which might just as easily have been an anaesthetist's equipment. To his right, another man, also clinically clean, sat before the banks of switches and dials of what was certainly the high powered radio equipment—but even so was reminiscent of an electroencephalograph.

Between these men and their dimly sensed assistants, through another hatchway, Ed glimpsed part of the gracefully curved side of the Diver. To his heightened imagination, its skin seemed more than ever like the scales of a silvery fish. He had to remind himself that he was actually seeing a complexity of moving parts designed to reduce atmospheric friction to manageable proportions just as the wheel had once done for surface traction.

With as little conscious motion as if he had indeed been on a surgical trolley, he found himself in the launching chamber proper.

Previously the streamlined needle shape of the Diver had recalled *pictures* of atmospheric rockets and Earthly submarines. But now, surrounded by its attendants in sterile white, it seemed almost like a living thing under anaesthetic. Its nose, unscrewed and hanging from a chrome crane arm, might have been a part of its skull trepanned for an operation to its brain.

In a way that was how it was. A chill shuddered through Ed. He was to be its conscious brain—it already had its inbuilt instincts and the programme of its brief existence as an ‘unconscious brain’ within its flashing skin. He would be inserted in a careful ritual—soft, easily damaged tissue within the hard skull of the almost indestructible Diver.

It was a good thing this was only a training dive. It was in his contract that he could back out from attempting the real thing into Jupiter’s depths.

“I hope,” said Slipher, “that you aren’t going to let us down.”

Ed chuckled inwardly and felt better. The psycho was beginning to suspect their latest pilot was only using the Project as a means of getting to Earth.

Not that it mattered. From here it would be cheaper for the Company to set him down on this little planet than to convey him back out to where he had persuaded them to recruit him.

He had them there!

He was no fool. It was common knowledge that the first pilot to make the real dive had been shaken free of his harness and smashed to pulp; that the second had died of internal injuries; that the third had returned a mindless husk of a man. He himself had heard the fourth pilot, the well-known daredevil, Estes Escalona, refuse to make the descent, without extensive modifications to the Divers, when they had had the last conference before leaving the Jupiter Satellite.

The Jupiter Company might be all-powerful out there. *Out there*, they might be able to gloss over the deaths of volunteers by paying big compensation to dependent relatives, but *this* satellite was under Earth’s jurisdiction.

He, Ed Jackson, ordinary citizen of space, could cheat them here. Slipher and Beckner could talk themselves blue in the face. The Company could go to hell. It was nothing to him whether they ever did prove that men of Earth could survive under Jupiter’s thousands of miles deep atmosphere.

“Remember you are only an observer,” Beckner was saying. “The automatic pilot will do everything necessary for the dive and return, or will warn you should it cease to do so. Keep cool.”

“I will!” snapped Ed.

Beckner could not do even a training dive at his age. This was an operation which called for young blood. Ed grinned at the older man, aware of the superiority of youth.

The clinically silent technicians closed in on him. He let them

feed him feet foremost into the head of the Diver, and fasten him into the ejector seat harness. One of them plugged a power cable into his "G" suit. Another connected him with the Diver's radio. Still another checked methodically over everything that had been done.

Then they all retreated from view and the trepanned nose seemed to screw itself back into place.

Beckner's voice said into his ear, "Checking radio."

"Check."

"Now switch on viewplate."

Ed fingered a switch. A pair of circular screens, like windows close to his eyes, showed the back of a launching compartment similar to the one which he had left but empty—and then appeared to coalesce into a single, three dimensional picture of the same view as his eyes came into focus. No longer did the gently lit interior of the Diver's "skull" seem real to him.

"Are you on synchro or actual?" Beckner demanded of him.

He looked at the switch to be sure. "Synchro." It was a little disturbing to think that an actual film taken by an unpiloted Jupiter Diver as it had plunged into the unimaginable atmosphere of Jupiter would soon be giving him visual impressions of the real thing, edited to match the training dive he was making.

"Go out on actual," said Beckner.

Ed switched over. The white clad mechs were going out of the launching compartment. The crane which had replaced the Diver's nose was folding back out of the way. Within moments the compartment was as empty as the synchronised film had seemed to make it.

He waited. Now that the instant of blast off was so near, he no longer thought. Breathing deeply and quickly, wide-eyed and nervy, he awaited impressions as Beckner's voice ticked off the last few seconds until the automatic firing.

A jolt. A brief sensation of motion. The compartment receded, like a garage left behind by a car accelerating out in reverse. Night closed in around the edges of the compartment, squeezing it out of existence; the doughnut shape of the whole space station showed as a pair of sunlit horns, with the points turned inwards almost touching.

It slipped away to one side. A brief sensation of turning. Earth, blue green and inviting, slid into view of his artificial eyes. Ed sighed contentedly. This was like going home . . .

At first Beckner just spoke occasionally. There was little to

say. The planet on to which he was diving—into which he was diving—seemed scarcely to swell at all.

There was nothing, just nothing for most of the time. Free fall. Of course the Diver did have its motive forces to ensure that it should hit the planet at the correct spot, and to assist its return into space but, unless his autopilot 'subconscious brain' should call for his aid, he had no need to interfere—indeed it might be dangerous for him to do so. Conscious direction is never likely to replace instinctive or conditioned reflexes in sudden emergencies.

A dive into Earth was child's play compared with a dive into Jupiter. Surface gravity on Jupiter approached three times Earth's. To overcome the greater attraction of the giant planet there had seemed only two ways. Atom power, or the steep dive.

Atom power was ideal rocket propulsion for the emptiness of space, but it called for so much shielding that the expense estimates had made fools of its advocates for Jupiter. What was merely heavy on Earth was of impossible weight on the giant planet, and although great strides had been made in the alloying of metals and the development of other materials for special purposes, concrete and lead and the like had never been suitable materials for aircraft, even in the atmosphere of Earth.

Descent theories had provided the answer. A specially designed ship could dive straight down, go deep—deeper than the bottom of the *gaseous* atmosphere—right down into the liquid into which the increasing pressure below that level compressed even the so-called permanent gases. Materials nowadays could provide it with mechanisms to make its skin move so that friction would be minimised. From high speed aircraft could come a design both fragile and strong—like the eggshell. At the deepest point of its dive it would be slowed, not by friction, but by its own buoyancy. It would at once begin to rise, if left on its own. It would move up faster and faster at first and even later momentum would carry it on up to leap higher than its actual floating point, up to a level in the atmosphere where rockets could carry it on up and out—chemical rockets which would have burst it asunder if fired within the depths . . .

Ed shuddered. That was on Jupiter, mighty Jupiter which had killed two men and destroyed the nervous system of a third. He was only in the training area, approaching Earth's thinner atmosphere and diving towards Earth's seas.

Presently he began to detect the increasing size of Earth's disc.

It was difficult to keep track of time. He was too cut off from everything except the voice of Beckner which sounded every now and then in his ear.

Of course there were billions of people down there, ahead of him. It was good to be heading for them. Slipher had said they would all have a holiday on Earth before returning to Jupiter; had seemed to think that this might make Ed change his mind and go back with them.

"Don't forget the synchro," said Beckner. "Switch it on every now and then and get used to it. We want you to use it as much as you can stand during the actual dive into air and water. Remember this is your final preparation for the real thing."

Ed grinned to himself at that; but he flicked the switch back and forth at intervals. Jupiter's gaudy bands, its red spot and familiar face was not what he wanted to watch at all. The faces of both Earth and Jupiter, the real and that on film, grew and grew. Hail to one; farewell to the other!

"Now keep on the synchro!" Beckner ordered sharply. "Hold your hand on the switch but only turn over to actuality if you feel it absolutely necessary for any reason. As you get to the bottom of your dive, I shall lose contact with you. But don't let that panic you. It will be merely a demonstration that liquids do not carry radio waves as well as gases."

"Of course," said Ed.

But it was too much to ask that he should spend all his time watching the filmed face of Jupiter when he could be witnessing his first approach to the Earth of his dreams. Even though Beckner and Slipher would know, he switched briefly over, every now and then, to the marvellous reality.

He saw the shock waves of the entry into Earth's atmosphere and the more violent lines of the filmed descent of some robot diver into Jupiter's. He glimpsed the sparkle of sunlight on the spreading Pacific and then, knowing that it would give the impression of him taking his training seriously, he switched over to the visual sensations of unreality, keeping his G-numbed fingers over the switch as he had been instructed.

Down and down and down. Beckner's voice faded to an urgent, distorted whisper, while the pictured reds and browns of Jupiter's weird clouds lashed up at him out of increasing darkness.

Time seemed to lose all meaning. Moments, or minutes, or hours—all would be the same in an eternity of lurid horror which one *knew* hated the soft, conscious-brained intruder from the

miniature planet of Earth and resented the eggshell containing him and the electronic subconscious of the autopilot looking after him. Men were never designed to be in such a place, under such pressures and in such cold—where oxygen turned liquid and was frozen out of the poisonous gases and of the atmosphere.

He felt sweat running over his skin. His nerves began to jump. Something like a vast expanse of boiling lava rushed at him. Every sense screamed, "Get out!"

Click! He had reacted without conscious thought to the unbearable stimulus. The blue green ocean of Earth's sunlit face replaced the nightmare of alien sensation. He flinched uncontrollably as it rushed to meet him and then exploded before him into rapidly darkening green depths. That was frightening enough.

Suddenly he was angry with himself because he dared not face what was, after all, only his own imagination. He fingered the switch.

Click! Infra red pictures replaced those of ordinary light taken on Earth as his superhuman mechanical eyes set the unreality of Jupiter about him. Down, down, down. He strove to remain calm as he looked out of the vibrating diver at the terrors of Jupiter's depths. He told himself that this unearthly ocean into which he only seemed to have plunged was millions of miles away from him. But he kept forgetting. The human visual sense—so much stronger than any other of the senses—kept blotting everything out of his mind.

Things were whipping at him out of the multicoloured horror—red and black and green and—Great shadows swam up and volleyed past him too quickly for clarity. A vaster darkness was creeping up—in imagination he could picture the terrible cold of such depths so far from the Sun—Was it imagination? Was not the chill coming through the skin of the Diver? Perhaps it would split like a burst banana at any instant, himself pulped—

Click! A strange, dark world of weird phosphorescent fish drifting towards him out of surrounding gloom. . . Earth. Of course. Oh what a fool he was. But he felt sick with reaction. Only gradually did he realise that motion seemed to have halted.

Knowledge is strength. He was at the bottom of the dive. Now he was beginning to rise. He could imagine the Diver, fish-like, jumping clear of the water as a result of its upward rush.

It was astonishing how very weary he was. Have to give



Beckner a good impression by coming back into range of the Earth Satellite's instruments on the synchro.

Click! Tall, swaying fronds moved down in front of his view. They appeared to be living plants. Beckner had said that they had expected to find life forms different from Earth, and yet not too dissimilar. There was carbon in plenty in the methane on Jupiter, and nitrogen, hydrogen and oxygen, quite apart from the rare gases, and there would surely be significant traces of other elements just as there were upon Earth.

Other weirder shapes also seemed to move with a separate life of their own. The longer one looked at unfamiliar pictures the more detail one had time to see. The chemistry of high pressure and low temperature might make for conditions in which Earthly life could not exist for a single instant without elaborate protection; but there did seem to be other kinds of life here . . . not intelligent life, perhaps, but some simple forms at least.

Ed shook his head within its cradling harness. The human mind can stand only so much before it becomes immune to further shock or amazement. Reality and unreality seemed to have merged.

He felt himself in a dream world of his own isolated mind. His fingers rested limply over the switch.

Earth's ocean was five or six miles deep here, Jupiter's inner mantle of liquified gases hundreds or thousands of miles deep—he could not remember figures just at that moment—but anyway depth was only relative and even time seemed to stand still.

He was going up through the swaying fronds and amongst strange creatures as far as he could tell—or care. He had made the training descent required of him by his contract with the Company . . . and he was so very tired.

Faster and faster, he rose like a bubble towards the surface.

There were three men in the satellite's conference room when he entered it. He felt partially restored after a long sleep and a warm meal and, although his nerves still jumped, he faced his interrogators as confidently as he could. He had not made up his mind how to tell them that he was not going through with a real dive. The test of the training dive had certainly found out and demonstrated his own human weaknesses. He knew he could only think of an actual descent into Jupiter's deep and strange atmosphere with terror stalking naked through his soul. He kept his face taut and forced himself to smile. When they asked him, he would say whatever came into his mind. Perhaps he would even tell the whole truth, just to show how thoroughly he had fooled them.

Slipher nodded at him. "You did very well, Mr. Jackson." But, before Ed could answer that unexpected compliment, the psychologist looked sideways at Beckner seated near him at the table. "See how confidently he holds himself. I told you that if we went back to the basic training area, a pilot who had never seen Earth would be successful."

Ed frowned. Was Slipher mocking him in some way?

Beckner swallowed noisily, and looked across the corner of the table at the third man who sat on the very edge of a chair against the curving metal wall.

Ed's eyes widened as he recognised the dark, handsome face of Estes Escalona. Had they brought the only survivor of the original pilots all the way from Jupiter just for this conference? Beckner was saying, "Now steady, Estes, we know how you feel about our bringing in this young man after what you said about the Divers needing modifications, but losing your temper will do no good."

Ed looked inquiringly towards Slipher to find the psychologist studying his face and about to speak to him. "I suspect, Mr. Jackson, you found that the human mind sometimes has difficulty in separating reality from unreality."

"It's all right, Ed," Beckner suddenly said. "A passage is booked ready for you to go to Earth." He glared at Estes. "That's what he wanted to risk his neck for!"

"A man," growled Estes, "ought to be allowed to know when he is risking his neck. I would have stopped them doing this to you, Ed, but for the Company guards they had on duty. The Company does what it likes with us, out here in its own area," he ended bitterly.

Beckner frowned at him, and Ed looked from one to the other, as the Project boss spoke. "Be reasonable, Estes. We all have our job to do. Mr. Slipher's method may have been unusual, but it worked. It was becoming necessary to prove that, what seemed more and more impossible with every failure, was in actual fact quite possible. Don't you remember how people used to scoff at the very possibility of spaceships—until more imaginative people demonstrated they were perfectly feasible—not easy to make or use, but within the bounds of possibility anyway."

"The basic training area," said Slipher, "is always the human brain and not any particular part of space."

"Perhaps . . ." Estes glared across the table. "But the way you went about this training was despicable, to say the least. It could easily have been criminal—murder!"

"It's done, anyway!" snapped Beckner, narrow eyed. "And it's no use you complaining. Results are what count with the Company. I don't know what you're so high horse about. You may still have the distinction of being the first man to enter Jupiter's deeps, knowing that he is doing so. There is honour in that, isn't there?"

Ed blinked. Ever since he had recognised Estes, it had seemed there had been an air of unreality about this conference. They were all studying him, waiting for him to react. "The first man," he murmured, "to enter Jupiter's deeps, knowing . . ." He stood very still. "Reality, and unreality . . ."

No one had said it directly, but he understood now. Every time he had been looking at Earth, it had been film—even that porthole must have been rigged with a visiscreen and projector. What he had supposed to be a filmed descent into Jupiter's unthinkable atmosphere had, in fact, been deadly reality.

He scowled. The little metal box of a conference room began to seem like a cage. Slipher was smiling across the bolted-down table at him.

He was trapped. That cunning, blue-eyed psychologist knew it. There was only ignominy in being the first human being to return alive and sane from Jupiter's depths, if everyone knew he had been fooled into making the dive. Earth would have to wait; if Estes was going down now, so was Ed Jackson!

E. R. JAMES



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Lone Voyager

Out across the limitless Cosmos it had journeyed—a two-edged invitation from Earth

Alarm bells clanged stridently throughout the Rigelian search ship, galvanising the crew into action. Each member ran as fast as his legs would carry him to his allotted station and the Captain was deferentially called from his cabin.

In the control room, all the outside view screens were activated, giving 360 degree vision. The vast wastes of space lay all around, punctuated by the steady glow of stars, rifted with nebulae, sprinkled with star clusters and powdered with galaxies.

"Thirteen degrees to port, sir," the Executive Officer indicated, trying hard to control his shaking knees. What a discovery!

The radarscope gave the position of the unknown, mysterious object, drifting nearer.

"Description!" the Captain barked.

How the Exec. hated these staccato, one word, demands of the Captain. However, it was a pattern he would remember against the time when *he* was promoted.

"About——"

The Captain swung round, growling, "Exactly!"

Suppressing an indiscreet remark about old space dogs serving past their time, the Exec. complied. "It's seven metres long, cylindrical, 2.3 metres in diameter; transparent bubble at one end;

artificial." He forced his voice to be as formal as possible, covering up the excitement that coursed through him.

The Captain cast a speculative eye on the young officer. He thought to himself wryly, I bet I know just what's in your mind, young 'un. You think I'm past my prime, no longer fit to command, a cantankerous, snapping old fool who's to be humoured at all costs until this voyage is over.

"But I was in Rigelian ships before you were born. We thought when we had invented a stellar drive that we would be travelling out into a Galaxy teeming with all kinds of intelligent life. And we found none. *None*. All those stars, all those planets, and not a spark of intelligent life on one of them. You come upon a beautiful, green world, right gravity, correct nitrogen-oxygen atmosphere, suitable temperature, and you think, perhaps this is it, this *must* be it. And when you draw a blank, the disappointment floods through you again and you have to struggle for the courage to carry on with the search.

The emptiness of the Universe is appalling. It's given me a sense of loneliness, of hopelessness and I've become as I am to cover it up.

Aloud, he ordered crisply, "Have the object brought alongside and stowed in the equipment lock. It can be studied via the screens."

The Exec. asked, "What if the occupant resists, sir? Our radio signals have not been answered."

"Use your initiative!" the Captain snapped irritably. "Surely I don't have to lead you all the time? The drill for contact with aliens has been rehearsed on countless occasions. I'm going to my cabin. Call me when you have the alien aboard."

He stalked away, growling to himself in frustration.

The Exec. sighed wearily and wished the voyage was over. Then he proceeded to snap the heads off all the personnel in the control cabin. But discipline was lax and no one took much notice of his tirade.

The gravitic beams locked on to the alien craft and pulled it in, like a spider hauling a fly to the feast. Weak starlight glinted off the alien hull. The Exec. wondered what the occupant was thinking. Shortly, their prize was safely stowed in the lock.

The Captain, officers and experts examined it curiously as it lay slightly tilted to one side. No movement was obvious. Was the alien dead, or merely lying low? They couldn't see inside the

transparent bubble. Meteorite scars had caused a pattern of starry cracks that rendered the surface opaque.

The Captain decided, after consultation with his scientists, that the craft should be opened up. Cautiously, an engineer approached the bubble and, after an examination, started to loosen it

The decision to give a space burial to the first terrestrial to die in the airless void above the Earth was well received by the peoples of the planet. It appealed to their sense of drama and underlined man's valiant march towards the planets and one day to the stars as well as coinciding with the first public demonstration of the achievements of the U.N. Time Travel Foundation.

At 12 noon, G.M.T., on the 10th of July, 1998, the ceremony began. Satellite relay stations made it possible for the whole world to look in on T.V. Big businessmen on Wall Street and Eskimos in Northern Canada; workers in the Malayan rubber plantations and the stiff-collared clerks in the London offices; keepers on lonely lighthouses and the millions at home in Glasgow and Paris and Tokio and a thousand other towns and cities.

One of the cameras was situated inside the observation room of the United Nations Time Travel Foundation Space Station where the body of the world's first space casualty was to make its miraculous appearance. Another was trained on the rocket that was to be the coffin of its heroic passenger. For dramatic effect, other cameras were providing flash scenes from various spots on the globe.

The whole world was silent as the Swedish President of U.N., speaking in faultless English, now the official language of the Earth, gave a sincere and humble benediction to the first space casualty. He pressed a button and all Earth gasped in wonder. The body of one, long since thought lost forever, lay in full view of the watching millions. There were no stirrings of life—indeed, only inanimate objects could withstand the time jump—but then, that heroic life had long since come to an end. The body was reverently lifted by white-coated attendants and hurriedly transferred to the waiting rocket.

Flame streamed from the tail and the rocket moved away on its journey into the unknown, slowly at first, then with increasing acceleration. Within minutes, it was lost forever to sight.

The rocket had drifted for a thousand years, a lonely coffin, with only the cold, unheeding stars to mourn its passing. Great

comets swept past in haughty grandeur to rendezvous with the burning Sun many years in the future. Scurrying meteor streams hurried by, heading for a brief, fiery death in the deceptively soft atmosphere of the Earth. The orbit of Pluto, frozen, lifeless outpost of the Solar System, lay hundreds of years and over a hundred thousand million miles in the past. The Sun was merely a bright star among a myriad of others.

Carried along on the invisible tides of interstellar space, the rocket pursued its course to some unthinkably remote haven. Insignificant, yes; but significant enough to set the alarm bells ringing in an alien ship.

The Captain licked his lips in a most un-Captain-like indulgence. He caught a half grin on the Exec.'s face and swiftly regained his composure. They all leaned forward in anticipation.

The engineer had the bubble loose. Conscious of his dramatic rôle, he paused, playing it for all it was worth, until a stern reproof from the Captain spurred him on. He lifted the bubble off. A collective sigh escaped their lips. The occupant was a being like themselves! It was an unbelievable stroke of luck. To search hopelessly, then this——. Unfortunately, the alien was dead and, according to the doctor, had taken no interest in events for a long, long time.

The semanticist had put his head together with the philologist over a metal plate they had found screwed on the starboard side, near the bubble. Other experts were making surveys in their own fields of propulsion, guidance and control, metallurgy, plastics, biology and so on.

Finally, the report lay on the Captain's desk. He read it through slowly, savouring the little piece of alien language to the last. After all the weary years of searching and frustration, he could wait a short time longer.

At last, he read the inscription, which said,

?????

*The first terrestrial to die in space, that the attainment of
the planets and the stars might be furthered.*

The initial word, containing five symbols, remained, so far, untranslated. He rose and walked sedately to the control cabin.

"Navigator."

The officer started in surprise and suspicion at the gentleness in the Captain's voice.

"Sir?"

"What is the nearest star to our present position, please?"

The tone was almost benign.

The Navigator checked a sheet before replying, "A single yellow star, sir. Distance, approximately, $1/25$ th of a light year. Diameter, about 850,000 miles."

The Captain didn't even comment on the use of "about".

"We'll head for it. Perhaps"—he stared out at the glorious march of the hard stars across the black immensity of the beach-head of space—"perhaps the alien's race comes from that Sun. A race cast, like ourselves, in the true image."

The philologist himself brought the translation of the missing word.

"Because it was at the beginning of the sentence, sir," he explained excitedly, "we were put off the scent. It's a proper name, actually."

Overlooking the scientist's most un-scientific phrasing, the Captain read the name.

Laika.

For the first time in years he permitted his tail to wag.

DONALD MALCOLM



BACK NUMBERS

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The Wanton Jade

*The starship was now the only world they would ever know .
and in its darkened corridors the struggle for survival continued*

There was no hope.

It had lasted a long time, far beyond its usefulness, but now it was gone, together with the other luxuries of civilised living. Now there was no hot water, no taped shows, no well-cooked food, palate-tingling drinks, easy hours of idleness or the invigorating company of others. Now there was no purpose in life, no aim, no sense of belonging. Now there was nothing left at all but the basic urge of self-preservation.

And how long that would last Glen Arnold didn't know.

It was a curse this instinct to live despite all logic, all sense, all knowledge that to extend life was merely to stave off the inevitable. And yet it had its compensations, too, this single-minded purpose. Life had narrowed to a tiny, personal world in which each decision applied to himself alone, each equation had to be fitted into his own personal scheme of things. Today he planned events so that he might be alive tomorrow. Tomorrow he would plan so as to remain alive yet another day. Beyond that he did not think.

Footsteps echoed along the corridor which ran past the cabin in which he squatted. They were not the sharp, crisp footsteps of a well-shod man in good health intent on his business, but the shuffling irregular steps of an old man or a man who walked as if he

were old. They identified him, did those footsteps, as did his voice, cracked and harsh, wheezing from labouring lungs, growing louder as he approached and fading as he passed.

"Lo, the day of redemption shall come with fire and the sound of fury and the sinners will be consumed beneath the Hammer of God. There shall be the sound of wailing and the gnashing of teeth as the fires of Heaven shall destroy them utterly and none shall be left to mourn their passing."

Third Officer Masters shuffled down the corridor on his continual round, his ulcerated feet leaving ugly smears on the metal decking, his left arm hanging limply at his side. He had never been a religious man but, perhaps during his youth, he had received religious instruction, and now his distorted mind babbled out half-learned, never-understood misquotations as if mouth and brain were the components of an organic tape recorder.

Third Officer Masters, once the close friend and ship-brother of Second Hydroponics Officer Glen Arnold, was now a bearded, diseased, dying man babbling fragments of the Book he had always derided. And the fact that both of them had survived at all was nothing short of a miracle.

There had been too few such miracles when the "Hammer of God" had destroyed the "sinners" with the "Fires of Heaven". The meteor had come with but the briefest of warnings, a green fleck on the radar screen growing to frightening size as the instrument registered its incredible relative velocity. It had appeared and struck and continued on its path undamaged, unchecked, uncaring, while behind it the *Astar II* had shuddered in its death agonies.

And of the three hundred and twenty-seven passengers and crew only some twenty-five had been left to mourn, and of those, half had died during the first fifty hours.

Now, how much later Glen didn't know, the survivors numbered an unknown quantity.

And the unknown was not to be tolerated.

No one was following Masters. Glen made certain of that before he left the dark safety of the cabin, waiting tense by the sliding door, ears and eyes strained for any sign of a furtive shape. There had been no firearms on the ship but he had managed to salvage a kitchen knife, whetting the blade to a razor's edge and a needle point and, as he waited, he held it ready in his hand, thumb to the blade and the edge upwards, a grip he had once read of in some ancient book. Finally, when satisfied that the corridor was

empty, he emerged from the cabin where he had slept and stole down the corridor on silent feet.

Much had been written about what would probably happen to the survivors of a wrecked space ship. There had been speculative wonder on how the tiny band of survivors would band together, each working for the common good. The officers, if any remained, would naturally take command, the passengers take and obey orders. They would ration what food and air remained, make heroic attempts to signal for rescue and then wait until help arrived. Usually, to add a touch of drama, one or more of the officers would risk his life, give it, even, so that the others might live. So it had been in speculative fiction. Fact was something quite different.

The meteor had smashed into the ship like a hammer and the concussion had been frightful. What automatic mechanisms had remained operable had done what they had been designed for, sealing the undamaged portions of the vessel against further air loss and guarding the life within from asphyxiation. But no self-sealing door could stop the effects of inertia, heat and the searing wave of radiation from the ruptured pile. Most of the passengers had died without knowing what had hit them. Those who had survived the initial shock gasped out their lives in the kinetically generated heat. Most of the rest had been seared by the wave of released radiation and had died, if not immediately, at least without excessive delay. The remaining few had not operated according to the book.

Many had died and the fear of disease was strong. The remaining officers, both of them, had been blamed for what had happened to the vessel and the passengers refused to obey the orders Glen issued. Masters had not been able to give orders, or to talk any kind of sense for that matter, and he had been the first to wander away from the tiny group. He had anticipated the general disintegration by a matter of days.

Now Glen walked the empty corridors, a knife in his hand and a grim determination to survive in his heart. And he could be sure of survival in only one way.

The emergency batteries were powerful and the corridors were lit by a dim blue radiance from the surviving bulbs. It was a weak light but enough when eyes were accustomed to it, but Glen could have wished that it were stronger. It was a nerve-racking business this walking silently along the corridors, halting at each cabin and cautiously flashing the beam of his lantern into the dark interior. A nerve-racking business but it had to be done. The alternative was directly against the pattern he had fashioned for his self-preservation.

"Wish there were two of us," he muttered to himself. "One to scan and one to cover. Get the job done three times as fast that way."

He was almost unaware of the fact that he was talking to himself; he had slipped into the habit without consciously thinking about it. But even so he mimed rather than actually speaking; little sound passed his lips, his caution killing the words before they could do more than stir the air.

"Corridor D," he communed as he reached the end of the passage. "Sealed door at the end and not a sign of life. Communication shaft leading to kitchen and stores."

Thinking of the stores reminded him that his stomach was empty. He didn't have to venture to the kitchens, he had caches of food planted all over the ship, but the stores had to be checked in any case and, as he was so close, he decided not to waste the opportunity.

He sensed something wrong as he neared the door of the huge compartment ranked with its dead electronic ovens and other catering equipment. It was nothing definite, just an impression, but it was so strong that, despite the fact that he could see nothing inimical in the light of his lantern, he stepped warily forward. Something touched his bare shin, a feather touch but enough to send him leaping backwards, the knife poised for action, the beam of his lantern swinging towards the floor. A thin thread shone in the white light, a hair-fine thread of glowing metal, stripped probably from an electric cable, strong enough to stand immense weight and yet fine enough to be almost invisible.

"Booby trap!" he told himself. "Steady!"

For a long time he stood poised and motionless, ears and eyes alert, the lantern dead in his hand and only the dim blue light of the emergency lamps throwing their shadowless glow over the kitchens. In their light the thread stretched across the door was impossible to see. Cautiously he dropped to his knees, trying to ignore the prickling sensation between his shoulder blades and the impression he had of watching eyes. Ducking low, he passed his head beneath the wire and glanced quickly to either side.

The trap, while simple, would have been horribly effective. A pile of cans had been piled on a short plank above the door, balanced in such a way that a tug at the trip-wire would have sent them cascading down on whoever entered. There was still gravity, the meteor hadn't killed the ship-spin, and the cans were heavy enough to have smashed his skull.

Quite obviously someone had designed themselves a pattern for survival similar to Glen's own.

He wasn't surprised. He had been alert for something of the sort and this was the reason he never slept in the same place twice running, why he had caches of food stored all over the remaining portion of the ship and why he walked softly on the balls of his feet, a knife in his hand and his muscles and nerves tensed in continual caution. Self-preservation dictated the elimination of personal danger. And there was only one way to be certain that such danger had been eliminated.

"Neat," he muttered to himself. "Neat, but foolish." Carefully he ducked under the wire and wriggled past it into the kitchen. Most of the store compartments had been burst open and their contents scattered, but he selected a few tins and opened them, eating with the blade of his knife, his eyes thoughtful as he looked at the trap.

Whoever had built it had used their brains but had lacked the ability to foresee the inevitable. Had two survivors entered the kitchen the probability was high that one would have survived. Had someone, as was the case, discovered it without tripping it then the result would have been the same. In both cases the builder had revealed his presence. Glen had toyed with the idea of rigging such traps himself but had discarded the plan because of that very reason. Now he knew for certain what he had previously only suspected. There was at least one other living survivor aboard besides Masters and himself. That survivor had to be found.

Finding him wouldn't be easy. The builders of the vessel had never visualised it as a jungle, but that was what it had become. A jungle of metal corridors and compartments, of cabins and shafts, a dim, blue-lit area which was now an entire world. But it was a world with severe limitations and restricted resources even though it had a tremendous area of floor space. Searching it was almost impossible for one man, dangerous, too, a nerve-tingling game of hide-and-seek with the ultimate prize for the winner. And it was a game he had to play to the bitter end.

Slowly he finished his meal, savouring the food, cold though it was, taking time so as to avoid stomach pains and indigestion. He was in no hurry, time had become a meaningless word, and he could not afford to take a single wrong action. Satisfied, he opened a couple more tins and, dropping to the floor, wriggled his way out of the compartment.

It was awkward to move holding the opened tins, the lantern and the knife. He compromised by gripping the blade between his teeth, the lantern in his left hand and the opened tins in his right. He held them easily, thrusting his fingers deep into the contents, and yet he could drop them in a moment and use the free hand to snatch at his knife. He wasted no time in the area around the kitchens, it had become more of a danger spot than ever, but walked quickly back down the way he had come towards where a harsh voice echoed thinly in the distance.

Why he bothered to feed Masters Glen didn't know. Perhaps it was because once, in a different time and world than this, they had been friends. Or perhaps it was because he, like Glen, had been an officer. It could even have been common charity of the strong for the weak, the mentally stable for the hopelessly insane, or it could have been because of a far more practical reason.

Masters, in a way, was a kind of a guardian. He never ceased his discordant misquoting and, aside from short periods when he fell into a brief sleep, he wended his monotonous path around the limits of the habitable portion of the ship. If anything happened to him it would serve as a warning to Glen to take extra care. If his voice broke or faltered then that would be a sign that he had seen or met someone. Glen he never met, their only contact being the opened tins of food placed regularly in Masters's path and which were probably attributed to the direct intervention of God, a modern-day manna in a modern-age wilderness.

Setting down the tins, Glen hurried back towards the kitchens and the booby trap. Cautiously he checked the compartment, grunted when he found it empty and, ducking back under the wire, moved on towards the jumble of stewards' and cooks' cabins which filled the area beyond. He paused as he came to the first of the tiny cubicles, checking the row of open doors with his eyes. He had opened them himself and a closed panel would have been a glaring signal. None was closed, but that didn't abate his caution; someone could be lurking within a dark interior ready to pounce as he passed. Resignedly he began to check each cubicle in turn.

It would have been a simple matter for him to have dusted the floor of the corridor with flour or talc so that strange footsteps would have shown themselves in the dust. Simple, but tantamount to suicide. Such an action would have betrayed his presence and, had anyone discovered the trap, it would have been easy for them to have redusted the area and so lured him into a false sense of security. Safety had to be won the hard way.

It wasn't hard to check the cubicles, not as hard as it was to check the passenger cabins, for those had multiple rooms, while these were more like prison cells. Rapidly Glen stole down the corridor, hardly pausing at each opening while the beam of his lantern flashed into the interior. He was almost at the end of the corridor when he halted, something nagging at his mind.

Masters' route was predictable. He should have passed the spot where Glen had left the opened tins of food, scooped them up and, eating while he walked and talking while he ate, should have reached the end of corridor D and then reversed his path. For some reason he never used the communication shaft leading to the kitchens. That didn't bother Glen; what did was the fact that he couldn't remember hearing the rise and then the fall of the Third Officer's voice as he had first approached, then retreated from the end of the shaft.

Something had happened to Masters.

What had happened was murder, pure and simple. Masters lay in a widening pool of his own blood, his eyes, still open, glazed and empty, pits of shadow in the dim lighting. He had been struck from behind, a savage blow which had crushed his skull into a pulpy mess and forced his tongue from between his teeth so that he lay with his features contorted into a childish grimace of defiance. Of the food there was no sign.

Glen didn't touch the body. He took care not to step into the blood but, standing well clear, his eyes read what must have happened. Someone had followed the Third Officer and, racing up behind him, had killed him without mercy. Then they had scooped up the food and run into hiding. Or perhaps they had merely entered the first cabin where they could eat in peace and watch the bait they had left lying in plain view. Slowly Glen backed away.

The killing itself, as a killing, didn't shock him. There had been far too much death in too short a time for it to have retained its old importance. Masters was dead but Masters would have died in any case; even at a distance the odour of his gangrenous wounds was sickening. Whoever had struck the blow had, in a way, done the Third Officer a service but, for some reason, Glen couldn't wholly accept that. Old associations, he supposed, the memory of Masters as he had once been, trim and neat in his uniform and full of the zest of living. That Masters had died when the meteor struck, what had remained had been alien to those memories, but the thing

which disturbed Glen was that there had been no real need for the killing at all.

Masters had been harmless. He had wandered the corridors like a modern age prophet telling of the doom that had come. He was an irritant factor but that was all. He had even lacked the ability to feed himself and so had presented no threat to the supplies. And yet he was dead and someone had killed him and that someone would kill Glen too if they had the slightest chance. Self-preservation dictated that Glen must kill them first.

The kitchen was still as he had left it, the booby trap the same. Glen checked the area, more from habit than from any other reason and then, ducking beneath the wire, entered. A shattered door gave him what he required and, returning to the trap, he swung the panel against the metal thread, springing clear as the cans toppled and giving a scream as they crashed to the floor.

Then he lay among them so that only his legs were visible to anyone outside. He lay with his hand on his knife, his head resting easily on the metal, his entire body relaxed. The cans had made a lot of noise as they had toppled down and his scream had been loud enough to echo over most of the ship. Now all he had to do was wait.

Waiting is never easy and, when you are the bait in a trap, it is more than hard. Glen had to force himself to relax, to play dead but, despite himself, his ears sang with the strain of listening for the first soft footstep which would herald the coming of whoever had built the device. Come they would, Glen never doubted that. The trap had been built for a purpose and the builder would come to see what he had caught. Glen hoped that he wouldn't have to wait too long.

How long he waited he never knew but it was a long time. The floor was chill and cramps began to knot his muscles so that he had to bite his lips against the desire to move. Of greater danger was the tendency to drift into a peculiar state of semi-coma in which his imagination peopled the kitchen with the busy cooks, the hurrying stewards and the odorous scent of cooking foods much of which he had supplied from his hydroponic tanks. Then he thought of the places he had seen and the people he had known; the long hours and years of study to win the right to wear his uniform, and, for some reason, he thought a great deal of the old Masters and the way the new Masters had died. When his straining ears finally caught the soft rustle of approaching feet he almost ignored the signal.

They were cautious, those feet, soft and light, a mere whisper

of softness against hardness as if someone had wrapped strips of cloth around them to dull the noise of their passing. They paused for a long time at the door as if their owner were searching the entire kitchen with anxious eyes then, abruptly, pain stabbed from Glen's calf.

Almost he cried out at that pain and sweat beaded his forehead as he fought the desire to move. Again the something sharp prodded at him but this time he had expected it; it was, after all, only an expected caution on the part of the builder. Then the footsteps whispered closer and it was time for action.

A man cannot lie for long hours on a chill metal floor and be as active as if he had moved normally. Glen had forgotten that but it was brought home to him as he moved. He sprang to his feet, his knife lancing towards the dim-lit shape close to him, but his knife cut air, not flesh, and he stumbled as his numbed feet yielded beneath him. Desperately he sprang away, tripping over one of the cans lying on the floor and falling heavily on his knife arm. The pain was sickening but more so was the sense of failure. He rolled as a crude spear, the same one which had stabbed at his leg, darted towards him, and forced himself to his feet and back to the attack.

Again the spear darted towards him and he swept it aside just in time with a swing of his left arm. He grabbed at the shaft, caught it and jerked it from his opponent. Dropping the weapon he leapt forward, his hands extended to catch hold of the dim, muffled figure before him. A can rolled under his foot again and he toppled, fighting to regain his balance, fell and clawed frantically at an ankle. His fingers closed around their target and he pulled with a savage strength which brought down the figure. A knife flashed towards him and he felt the burn of steel along his left forearm. Then he had brought up a knee to trap the knife hand and his fingers were closing around a throat.

It takes time to strangle anyone, more time than the sudden stab of a knife or the blow of a club. Had Glen retained his blade the fight would have been over within a matter of seconds but he had lost it when it fell from his numbed hand. His fingers were still stiff but he had two hands and what one lacked the other had the strength to do. But, if it takes time to strangle anyone, it is also difficult to do it without looking at the person to be strangled.

And Glen suddenly found it impossible to tighten his hands about the throat of the woman on whom he knelt.

Theoretically it should have made no difference at all. She had

tried to kill him both by guile and by direct attack and he had set himself for bait in order to kill the builder of the trap. The fact that it was a woman should have made no difference whatsoever. Self-preservation did not include charity, custom or chivalry. But, suddenly, self-preservation did not seem all-important.

"Who are you?" He whispered the question as he relaxed his hands but caution made him retain his weight on her arm.

"Glynis Yendle." Her free hand came up to massage her throat. "You almost killed me."

"That," he said grimly, "was the idea." He stared down at her, trying to fit name and memory together. There had been women among the survivors so her presence shouldn't have startled him but he had thought, when he had bothered to think at all about it, that they had all died or been killed or, as he knew for certain in one case, had killed themselves. Not many modern women had the stamina and courage to fight for their existence.

"Glynis Yendle," he said. "I remember you." He had finally placed name and face together and the result surprised him. She had been a passenger, a schoolteacher he thought, a quiet woman past her first youth and yet not old. She hadn't been attractive either, as he remembered, the sort of woman who is easily lost in a crowd. He remembered her, during the first, hectic days, sitting numbed and mouse-like as if unable to believe that what had happened had really happened to her. Now she had tried to kill him and he had almost killed her.

"My arm," she said. "You're hurting me."

He reached down and twisted the knife from her hand before releasing his weight. His own knife lay among the scattered cans and he recovered it together with his lantern. When he turned the woman had risen to her feet and was staring at him with a puzzled frown.

"Second Hydroponics Officer Glen Arnold," he said, anticipating her question. He swept his hand beneath the ruff of beard on his chin. "Don't apologise for not recognising me."

"An officer!" She made it sound like a prayer. "I didn't think that any were left."

"I'm the last," said Glen coldly. "There were two but not any more." He stared at the scattered cans. "This is your work, I take it?"

"Yes." A look of horror came over her pale features. "I'm sorry, it might have killed you."

"Wasn't that the idea?" Glen didn't like to see her expression

and neither did he like her confession of weakness. He could admire someone who fought for themselves but had only contempt for those who tried to apologise for their actions. The trap had been an ingenious idea even though it hadn't worked. It was the sort of idea he would have expected from someone physically weak or a physical coward. That kind of person would be the type to work out traps and snares. That kind of person would also be willing to kill if their victim couldn't see their approach. Glen thought of Masters and felt an irrational hate for the woman and a vague regret that he hadn't killed her when he had the chance.

"You were going to kill me," she said. "Why?"

"Isn't it obvious?" He gestured towards the scattered remains of the booby trap. "For exactly the same reason that you set your snare. A man can only consider himself secure on this ship if he is the only man left alive—and I include women in that statement." He laughed without humour at her expression. "Don't look so shocked. You set this trap in order to kill someone, you've admitted that, and I'm not blaming you for making the attempt. By the rules of the game I should have killed you and one day I shall probably regret not doing it."

"I didn't set the trap for you," she said. "Not for you. I didn't even know that you existed."

"You set it just as a precaution?" He nodded, it made good sense and he didn't disbelieve her when she said that she hadn't known of his existence. He had taken very good care to keep it a secret. And then he remembered Masters.

"I can understand the trap," he said. "I would have set some myself if I had thought that they were of any use but I remembered what you had forgotten; traps can be two-edged affairs. But did you have to kill Masters? He wasn't after the food, if that's what you were trying to protect. He was a dying man and harmless. Did you have to kill him for the sake of the food I left for him?"

"I didn't kill Masters," she said. "I haven't killed anyone."

And Glen knew that she was telling the truth.

The unknown quantity is always dangerous and the unknown quantity still remained. Unknown in the sense that its location was open to doubt. It was a man, of that Glen was now certain for, sitting in the dim-lit kitchen, Glynis had talked as if she found it difficult to cease. There had even been a little hysteria which Glen had quickly, if brutally, stopped. Shock at her near-death coupled with relief at finding an officer had unlocked her tongue.

"I thought that I would go mad at first," she whispered. "I couldn't seem to understand what had happened and, when I did, it was like living in Hell." She shuddered. "The noises of the injured and the fear of dying and that man, Masters you called him? praying and preaching and never stopping for days on end."

"I was there," Glen reminded her. "I saw it all."

"I couldn't stand it," she confessed. "I ran away and found a cabin and some food and water and all I wanted to do was to just sit there until the rescue ship came and I could begin to live again."

Glen didn't say anything, the pattern had been a familiar one. First the escape from reality and the savage clinging to useless hope. Then the slow but final acceptance that there would be no rescue and that life, if it was to survive, must return to the primitive. And yet such life should have been easier for a woman.

"They hunted for me," she said. "There were five of them and they quarrelled all the time about who was going to——." There was almost a fresh outburst of hysteria. "They were animals! Beasts! I'd have killed myself rather than let them find me!"

There had, Glen recalled, been five women among the initial band of survivors. Two had died during the first fifty hours. One had killed herself in grief over her lost husband and son. The other had been an old woman; Glen didn't like to think of her fate. It was inevitable that Glynis should have been hunted. Inevitable too that the hunters should have quarrelled over something they did not possess. The jungle had more than one law.

"So I waited," she continued. "I waited as long as I could, sneaking out from time to time and searching for food and water. Once, when I returned to my cabin, I found someone had been there. It frightened me and since then I've kept on the move, sleeping when I couldn't stay awake any longer and watching all the time." She gave a little sigh. "Finally I thought of building the trap. I just couldn't stand the suspense any longer."

After a short pause Glen returned her knife and together they set out to clean up the ship.

"We have to do it," said Glen. "You've known that all along. Whoever is out there, whoever it was that killed Masters is dangerous. He killed primarily for food but the real point is that it wasn't necessary for him to have killed Masters at all." He looked at her face, pale and colourless in the dim lighting. "If it had been necessary to kill Masters," he said deliberately, "I would have done it long ago."

"I believe that you would," she said and, like Glen, kept her voice to a whisper. "Does life mean so much to you?"

"I've never thought about it," he said with truth. "It just seemed to be the only thing left, to go on living, I mean."

"But why? For what purpose?"

"You don't need a reason for living," he said curtly. "Only for dying. As yet I haven't found a good enough reason for that." He halted at the junction of the communication shaft. "Go down the shaft. Move slowly and cautiously and take no chances. There are no cabins until you reach the upper corridor. I don't think that you will find anyone there but we can't be too careful. Wait for me there."

"And if I should see anyone?"

"Kill him without hesitation."

"I understand." She stared at him, her face ghastly in the blue radiance. "And you?"

"I will make a circuit and meet you at the upper junction."

"And if anything should happen to you?"

Glen shrugged.

"You know where he is," she said suddenly. "This man we are looking for, you know where he is to be found."

"No," said Glen, and pushed her towards the shaft before she could waste more time with her tiresome questions.

The ship wasn't big, not the portion of it that remained, not big in relation to the whole, that is, but even so it was big enough. Too big for Glen to search in one wide circuit but he had no intention of doing that. Instead he raced down the corridor, taking chances and relying on speed to carry him past any lurking danger. Not that he believed that there was any danger here, not now, but habit is a hard thing to break, especially is it hard when painfully acquired. But his plan depended on speed.

Corridor D was, as always, deserted, the blank doors of empty cabins gaping in the glow of the emergency lights. At the far end Glynis would be waiting, if she had reached the junction yet and if no one had crept up on her from behind. Glen didn't think that the latter had happened, she would have been certain to have screamed, but he wanted to arrive at their rendezvous before she did.

Masters' body lay where it had fallen, the eyes still open and glazed, the tongue still protruding. Glen slowed as he neared it then, taking a chance, ducked into a cabin which a brief flash of his

lantern had shown to be empty. There, knife in hand, he waited for what was to come.

Someone could have spotted him but that was a chance he had to take. He had moved with swift silence and had not gone too near the body. If the killer was using it for bait then he would be somewhere close to it, ready to spring and strike whoever should follow their automatic instinct to approach the dead man. It was a simple trap the killer had laid but Glen had laid a better. His bait wasn't a dead man but a warm, living woman. It was a bait which he doubted could easily be resisted.

He heard Glynis when she reached the junction of the shaft with the corridor. He cautiously extended the blade of his knife, using the bright steel as a mirror in which he could see distorted reflections. It wasn't her footsteps which betrayed her but the sudden, sharp indrawing of her breath as she stared down the corridor and saw the lifeless figure.

"Glen!" The cry echoed like a pistol shot and, in the darkness of his cabin, Glen tensed himself for swift movement. Her cry had identified her as a woman, surely the most potent bait of all in this wreck of a world.

"Glen!" She cried out once more and then fell silent as she recognised the dead man as Masters. She whimpered a little then, remembering her instructions, began to move back towards the junction.

And the trap sprang with startling violence.

The man was insane, there was no doubt of that. He was deranged on more points than one. Had he wanted to kill the woman then he should have struck at once, not attempted to sweep her into his arms. Had he wanted to take her alive then he should have followed her and taken her when he was sure that she was alone. Instead he sprang from a cabin close to the dead man and extended his arms as if in invitation.

And Glynis sank her knife into his heart.

Glen saw the blow, heard the half-grunt, half-scream the man gave before he sank to the floor, the handle of the knife a black blotch in the circle of red, but still he did not move. The dead man could have had a friend, there could be someone else hidden in the corridor and, if there was, now was the time for him to show himself. The woman still had a use as bait.

No one appeared, obviously the killer had been alone or his friend, if friend there was, was more cunning than Glen gave him credit for. He stepped from the cabin and approached the woman.

She seemed numbed by shock, standing as if she still couldn't believe what she had done.

"You've killed him," said Glen. "I saw it, it was nicely done. Now it's all over."

"You saw it?"

"I saw it." He reached out and shook her by the shoulder. "Snap out of it, girl, it was he or you."

"You let me kill him?" Her voice was flat and lifeless.

"I didn't stop you killing him," Glen corrected. "I didn't think that you would do it, I was lying in wait to take care of him myself."

"But——"

"But nothing." Glen was rapidly losing patience. "So you killed a man, what of it? Are there any police to arrest you for what you did? And even if there were it was self-defence. And what of that trap you set, wasn't that tantamount to murder? It could have killed him, or Masters, or me." He tilted her head, so that she stared into his eyes. "Listen, girl, this isn't a game we're playing. We won but we could just as easily have lost. And there is something you've forgotten."

"Yes, Glen?"

"The only way to be certain of survival is to be alone," he said brutally. "Have you thought of that?"

"You won't kill me," she said with calm conviction. "You can't."

"No?" Glen had the uneasy feeling that she was right.

"No. And you know why?" For the first time since they had met she smiled at him. "You need me, Glen, as I need you. Together we stand a chance, alone we haven't a hope."

"There is no hope," he said. "Don't delude yourself about that. The meteor threw us off course for one thing and for another space is pretty big and pretty empty. There will be no rescue ship."

"Perhaps, perhaps not." She began to walk away from the dead men, her hand slipping into his own. "I'm a teacher and though I don't know much about space travel I do know this. Most orbits are ellipses, aren't they? A ship follows a route which is a narrow oval. One focus is the Sun and the other——"

"The other lies somewhere out in space," he interrupted. "Don't quote your schoolbook learning at me, not when I spent years studying to be a navigator. I never made it but I learned enough to know that you are wasting your time. Sure, one day we'll commence to swing towards the Sun on the return leg of our journey, but have you any idea when that will be?"

"It doesn't matter," she said.

"You think that we can go into suspended animation or something?" Glen shook his head. "We haven't even enough food to last that long even if the air and water hold out, even if we could live that long anyway."

"We can try."

"What for? Where's the use?"

"What else do you want to do?" Anger flamed in her sallow cheeks. "Just live like an animal, eating when you're hungry, sleeping when you're tired, just eating and sleeping and waiting to die? There aren't any more enemies to hunt now, Glen, not unless you want to hunt me. And if you kill me then you'll be all alone, have you thought of that?"

He remained silent.

"My way we have a chance," she continued. "You're a hydroponics officer, that means you can grow things in the tanks or rig tanks in which to grow them. We are surrounded by equipment and you have a good brain. Wouldn't it be possible for us to rig up a closed cycle system to take care of food and air and water?"

"It might be," he admitted. "It won't be easy but, yes, I think that it could be done." He stared down the corridor. "There should be spare cultures in the stores for the algae tanks, they might still be viable if the radiation missed them. Seeds too, and it wouldn't be hard to rig a waste reclamation unit. The batteries are strong and we could couple them together to step up the current for irradiation lamps. Yes, I guess that we could manage all right." He looked down at her as she walked at his side. "But we have no chance at all of being rescued or of seeing home again, you realise that?"

"We haven't," she agreed. "But I wasn't thinking of just us."

Then, because race-survival is even stronger than the instinct of self-preservation, he stopped and took the woman into his arms.

And hope, like a wanton jade, stole back to torment his heart.

E. C. TUBB



The Covetous

There was something odd about this little Earth-like planet . . . and something priceless which its natives gave away, merely for the asking

Illustrated by D. McKeown

As soon as they made planetfall, Swann had that old itchy feeling in his left ear. Staring through the port at the unearthly trees and greenish-yellow grass, he rubbed his ear contemplatively, like a cat washing itself, and smiled with a lazy, waiting greed. This time, he knew with complete confidence, he'd made Eldorado.

Jenkins, the astrogator, unfastened his couch straps, struggling awkwardly with the magneclamps, and sat up, his tousled hair and perpetually surprised expression as usual grating on Swann's nerves.

"What do you look so smug about, Swann?"

"This is it, Jenkins." Swann's new-found fervour of anticipation swamped his contemptuous dislike of the astrogator. Here, on this new world waiting to yield them its treasures—whether by chicanery, by swindling or by outright theft didn't really matter—he had the bubbling feeling that he had no reason to hold a grudge. "We've struck pay dirt at last," he said. "There's riches here for all of us."

Benozzo, the engineer, looked over Swann's shoulder out upon the alien world with its subtly unfamiliar colours and forms.

"It couldn't have come much later," Benozzo said, his heavy voice as sullen as his looks. "We're down to our last resources. Just enough fuel to get us back home——" He broke off and glanced obliquely at Swann. "That is, if your hunch is right."

"Of course it's right." Swann did not trouble to hide his brusqueness. He could shatter Jenkins by a word, a gesture. Benozzo was made of sterner stuff. More like Swann himself.

"Well, you'd better put your captain's jacket on, Swann." Benozzo underlined his words with a nebulous air of patronage. "Here comes a delegation of the local big shots."

Jenkins scrambled across to the port like a happy spider. "Who says I can't smell a good planet now?" His pride in his astrogation made his thin, weak face strangely radiant.

"Sure, Jenkins, you found us a good 'un this time. Don't you wish you could always hit what you aimed for?"

"Aw, lay off him, Swann," Benozzo said, not really caring. It had become a reflex action with him; he had long since given up hope—along with most other people in the Earthly portion of the Galaxy—of reforming Jenkins.

Astrogation and an inclination for the bottle rapidly became two mutually exclusive factors. Jenkins had plumped for one—with the result that he now found himself astrogating for a couple of slightly less-than-honest traders among the starways. He looked round at the interchange of words, scarcely hearing.

"They look almost human—yet they're not humanoid."

Swann laughed. "Bottle logic, Jenkins. Your brain can't keep up with your tongue."

Benozzo said: "Seems he's right, though. Why don't you take a look—captain?"

Under the flush of his new-found good humour, Swann decided to ignore the tone Benozzo had adopted. He could cut him down to size later. He turned back to the port.

"Human!" he said disgustedly. "They're just a bunch of perambulating fur coats."

Quite seriously, without any intention of being deliberately insulting, Jenkins said: "That's your trouble, Swann. You never could appreciate humanity. Why, those things just *are* like humans. You can feel it."

He pointed. From the screen of trees surrounding the space-ship in its self-made clearing a slow, solemn procession wended its

way over the charred grass. Sedately, half a hundred alien beings moved forward. They were, as Swann had said, like animated fur coats. Half as tall as a man, ribaldly fat, so that no one would ever take them seriously, with large dark eyes glowing from the fur that covered what might have been called a head—of neck and shoulders there was no sign—they appeared the personification of jolly roly-poly teddy-bears. At the flanks children—mere bouncing bundles of fur that gambolled and squealed and darted in all directions at once, it seemed—created a fringe of hilarity that quite ruined any effect of gravity the solemn procession might have attempted to maintain.

Benozzo, surprisingly, said: "On second thoughts—I don't know. Just round friendly bundles of fur, making us feel they are just like us humans." He shook his head. "I wish the Galactic Handbook had something to say about this planet."

"That," Jenkins said self-righteously, "comes from Swann's insistence that we keep clear of the known star routes. There could be anything on this planet."

"There could be—and there is," Swann said. "There is a fortune waiting for us to pick it up. That I know. Now shut up and get down and open the airlock. All the tests were affirmative. It's just like home sweet home."

Meekly, Jenkins went below and they could hear the reluctant machinery whine as the airlock, which had been closed for longer than either cared to remember, slowly opened. Picking up his captain's jacket and shrugging it on, Swann, already expanding to the coming venture, went towards the door. Then he paused, came back into the cabin, slid open a drawer, took out a hand gun and strapped it to his waist. Benozzo raised a quizzical eyebrow.

"Just in case, Benozzo," Swann said. "This time is our big chance. Nothing is going to stop me. Nothing."

Swann left. Benozzo gave a little puff of air that might have been construed as a sigh of reluctant admiration, and began to warm up and prepare the galacto-trans-lingua. It wouldn't surprise him if these nice, friendly, roly-poly bunny-rabbits had no spoken language; but he wasn't banking on it. Somehow, after that first automatic feeling of warm friendliness, they had struck him with a scratchy feeling of unease. A tickling sensation he couldn't put his finger on. "Still," he said aloud, watching the machine warm up, "I'm only the engineer around here, with no imagination. So long as Swann brings in the gravy I don't care."

But, inescapably, he knew he didn't believe that. Not any more.

Eighty-four terrestrial hours later, Swann came bouncing in from

the hut of leaves and branches set up by the aliens twenty yards from the ship's airlock. His face was flushed. He walked like a drunken man. There was an aura of intensity, of greed, of almost imbecile victory about him.

Jenkins was asleep in his cabin. Benozzo had been poking around down among his engines, and now he stood by the water cooler, his face and hands greasy, drinking thirstily.

Before Swann was fairly into the cabin, he was talking. He held his right hand, bunched up into a fist, before him. He might have been holding an invisible banner of war in front of a worshipping army.

"I knew it! I knew it! We've done it at last." He thumped the astrogation table with his left hand, again and again, as though unaware of what he was doing. "We're rich, Benozzo. Rich. It's all here. Pay dirt, at last."

"Simmer down, Swann," Benozzo said, putting down his cup. But the excitement had infected him, too. He reached out a hand. "Well, come on. Show me."

"Wait a minute. All in good time. Where's Jenkins?"

"Asleep."

"Well, rouse him out. Rouse him out, man."

"Now you wait a minute, Swann," Benozzo said slowly. "I don't know what it is you've taken from those poor stupid lumps of fur—but I'll take it as read that you think it's a fortune. So—do we cut Jenkins in?"

Swann laughed. He put his head back and let the laughter pour out of him, venting his feelings and the body-tearing sensation of triumph that possessed him. Yes. It was good to laugh.

"Of course not! But we need the idiot to steer us back, don't we? Use your brains, Benozzo. God knows you've few enough. When we get back—then. See?"

"I see. I'll fetch Jenkins."

Swann felt his fingers clenched over the jewel. Benozzo was taking it very easily—too easily. He must realise that he, too, was slated for rejection, just as was Jenkins. That was the trouble with the space rats you had to ship aboard these days—you couldn't trust any one of them. Then his excitement over the jewel washed away thoughts of future plans. God—but this was a big thing!

Benozzo looked up from the communicator. "Jenkins isn't in his cabin."

Immediately, Swann's attitude changed. "The drunken no-good— He's got the stuff stashed away all over the ship."

"We'll find him." Benozzo put the importance of Jenkins out of his mind. "What about whatever it is you've found, Swann?"

Swann hesitated. Then greed and the sheer desire to show off his treasure overcame him. He slowly unfolded his fingers and held out his hand palm upwards. A star shone in the cabin.

"See!"

"She *is* a beauty——" Benozzo bent closer.

"A jewel," Swann breathed. "A fire jewel—like nothing anyone's ever found before. And I found it. Here——"

"Let me hold it." Benozzo took the jewel before Swann could protest.

"Careful——"

Their two heads bent over the shining morsel of sunlight. Not quite round; but then not quite any shape that could be defined simply without the aid of complicated mathematics, the jewel felt soapy and had that partial depth of transparency and reflection possessed by wet soap. But it was as hard as diamond. The colour was—the colour was—well, a combination of blue and green and purple with subtle gradations that almost encompassed an orange glow.

The life of the jewel was unmistakable. The most prominent feature about it, the thing that you saw at once and only gradually took your attention from to assimilate the rest, was the hair-fine lines of crimson fire that webbed the whole inner structure like a visible indication of the interfaces. Like little wriggling, glowing worms. Like an electronic circuit. Like a hypnotist's contraptions to snare your mind away. Moving, and yet permanently fixed; glowing, and yet a dead mineral; radiant and yet cold as stone.

"Magnificent!" Benozzo said at last.

Swann suddenly chuckled, tossed the jewel into the air with a quick tap of his fingers on Benozzo's hand, caught the flash of fire as it fell and tucked it away into an inner pocket. "Magnificent, yes. But also—wealth."

The air of hushed tension had vanished from the cabin with the disappearance of the jewel.

"But how did you—where—are there more?"

"Hundreds. Thousands. Millions, I shouldn't wonder. Everyone has one. All the furry friends outside have one."

"So they're not valuable to them——?"

Swann chuckled again. "They haven't a clue. I showed them how to trim their fur with those cheapjack electric razors we picked up as a job lot. Tickled pink. Trimming patterns in their fur—like

a bunch of kids." He patted his pocket. "I expected jewels in return, diamonds, rubies, junk like that. But not this. Nothing like this."

Benozzo abruptly let out a huge guffaw. He slapped Swann heavily on the back. The meaning of the past few minutes had penetrated to his emotions; his basic character had caught up with his intelligence.

"Wonderful! Wonderful. And those poor monkeys trimming their fur and then the batteries run down—and replacements are light years away." He put his chin in his hand. "That dame—with money like this I can set her up to make her eyes pop open. Jewels——" A thought occurred to him. He said swiftly: "I suppose you've seen more jewels?"

"Why, as to that," Swann said offhandedly. "No, I haven't. But they've all got one, I can tell you that."

Benozzo swore. "How can you be sure?"

Swann bridled. "Because, lunk-head, when I'd got it through to them—their chief, I suppose you'd call him—what I wanted, they all nodded and one of them went away and came back with this beauty in his hand."

"Well, I always did say that using ancient methods paid off when you were trying to fleece anyone. Seems that trade goods and trinkets are still going currency among the stars. Haw—what a joke." Benozzo was not laughing. "They'd better all have one of these jewels," he said. "Better—two or three."

"Grab some more trade goods and let's go outside. It's stinking in here."

"You can blame Jenkins for that."

It seemed that Jenkins wished to be blamed for more than merely fouling up the air of the cabin. He was outside. He was staggering about on the grass, waving a bottle that slopped whisky, shouting and singing and generally scaring hell out of a bunch of the furry natives. Swann saw red.

He jumped towards Jenkins, caught the scraggy astrologer by the collar with one hand, and with the other struck the bottle into a flying arc of spilling whisky and shattering glass. Jenkins giggled.

"All palsh," he said. "They're all my palsy-walsies. Want to giv'em a drink. Must drink to frien'ship. Drink up."

"Have you been giving them liquor?" Swann shook him savagely. "Why, you dumb lame-brain no-good——" He glared round, his face ugly. "Benozzo. Grab that damned language

thing and ask the chief—that's him, the one with most hair—if any of his people have been drinking this rot-gut."

Benozzo jumped to obey.

"No—wait a minute." Swann carefully released Jenkins and dusted off his hands. "We can't let these gooks think we're dis-united. They might, they just might, decide to take all our pretty trade goods and not cough up a single jewel. And we don't have enough charges to shoot them all."

"So what, Swann?" demanded Benozzo.

"So just—here, give the thing to me." Swann snatched the gadget and thrust one set of attachments towards the chief. As though quite familiar with its operation, the alien rapidly fixed it up. Swann said: "Mighty chief, have you yet drunk of this man of mine's unholy water?"

"No, oh stranger from the stars. But one of my young men would like to try. It seemed to make this man very happy."

"Yes," Swann sought for an excuse. "This is not good. No-one in his right mind drinks this unholy water. Only those who are depraved beyond association with normal people——" He stopped, swearing under his breath. How to explain that one away? He said: "We must look after this man; he is sick."

The ring of funny furry aliens seemed to moo and coo sympathetically. Swann wiped his forehead. Hell—how had he come to be preaching TT? The answer to that was painfully obvious. He knew what happened to aliens if they drank the Earthman's firewater. Then he let out a shout, and pointed.

One of the roly-poly natives had bowled across to the smashed whisky bottle. A few drops glinted in the broken, jagged-edged bottom. Even as Swann pointed and everyone swivelled to look the alien lifted and drank.

He let out a frightful yell, span round twice, jumped into the air—and fell flat on what should have been his face. No sound broke the stillness. And then Jenkins giggled, and broke into a drunken laugh.

Swan said viciously: "Benozzo. Get him aboard. And strap him down."

Aliens ran towards their fallen comrade. A sudden chill entered the air. A cold breeze dampened Swann's shirt in the small of his back. The alien chief stared at him from saucer eyes and said: "My young man is dead."

The aliens were letting off hoots and howls. Swann decided

he'd be safer in the ship. Not that he felt afraid; he was thinking of those jewels. If he antagonised them now——

The alien went on: "Do not blame yourself. This man is doubly dead—but it is not your fault. You warned us. I am glad that your race knows how dangerous this unholy liquid is."

"Yes," Swann agreed limply. "We know."

After that things regained a more or less normal course. Trading went on briskly. An alien would select what he wanted from the brightly coloured heaps of trash brought out by Swann, roll off to the village among the trees, and, later on, return with one of the unearthly jewels. Swann could not properly distinguish between one alien and the next; but he had the odd feeling that it wasn't always the same alien who came back with the jewel to claim his bargain as the one who had just ambled off after making his choice.

The ethics of the thing did not interest him. Benozzo, too, had no scruples in the matter of making money. These were just poor ignorant aliens, all ready to be taken for a ride. If this planet bore them at better than a one a minute rate—wasn't that just the good fortune of the game?

Three or four days passed in this pleasant way. Jenkins remained partially sober. As Swann had said—he had it hidden all over the ship—and he couldn't be kept strapped down all the time when the others were outside.

The heap of fabulous gems mounted into an awesome pile.

One day Swann said to the chief, who, unlike his subjects, had no strings of bright beads dangling around him: "Why do you not take these goods and bring a jewel, chief?"

A ripple of unease—if the terrestrial term could be applied to these furry aliens—rolled from the watching natives.

The chief turned, majestically, and pointed at a native nearby. Swann had happened to notice that this one was old—some of the fur on his chest was quite grey.

The native went through some contortions which Swann felt to be strong signs of disapproval—nay, of refusal.

"He don't seem to like whatever the chief wants," Benozzo said.

"Yes. I thought that."

"Can't be sure, though. Impossible to say."

"But you can sense, something, an atmosphere, with aliens. You can't explain it——"

"I know," Benozzo said. "But, look, the chief's had his way."

The grey-haired native rolled off, visibly reluctant. Swann watched him go.

The chief said: "I have sent one of my men to fetch a gem." He used the Earthly term for the jewel. He added, quite inconsequentially it seemed to Swann: "I find it amusing that you cannot tell one of us from another. I can differentiate between you three humans."

"Forgive us," Swann said, trying to keep the sarcasm out of his voice. He was beginning to feel tired of this planet. He had a galaxy's ransom aboard. Time to head for home.

A dark-furred alien bowled up to the chief and handed across a jewel. He handled it, as did all the natives, with exaggerated caution and respect.

"Here," said the chief, extending the gem. "This one is surely worth a great deal."

Swann could see nothing different about it to mark it off from the others, and concluded that the chief was trying the old trick of demanding more. Quite cheerfully, he allowed the native to select a pile of exchange goods.

"Did you notice the alien who brought the jewel?" demanded Benozzo.

"Yes, he wasn't the same one who went off."

Benozzo frowned. "Don't mention it to the chief. I don't know what it is—but I figure we should leave here as fast as we can."

"Getting weak-chested in your old age, Benozzo? We're leaving all right. But only because I want to."

"All right, just so long as we do."

Jenkins was drunkenly remorseful when they entered the cabin. The astrogator reeked of liquor. "You're just a couple of no-good thieves," he hiccupped. "And I'm just as bad. Those poor li'l roly-poly natives only have one jewel apiece—and you're taking it off them." He flung out a hand spasmodically, and clutched at a table. "What are they going to do without their jewels? You don't care, do you? Oh no—just get rich quick."

Swann brushed past contemptuously, but Benozzo said: "You know, Swann, he's got a point. What do these aliens *do* with the jewels? Why only one each? Where do they come from? And why part with them so easily?"

"We don't know they've only got one each."

"I'll tell you something," Jenkins said. "When I was off in the trees I saw an alien with two jewels—how's about that!"

"Two?"

"Yep. One he was carrying, the other one was growing out of his head. He ducked under a branch—and I saw."

"You're drunk."



"Oh—no—I'm—not! You don't think things out. Suppose these alien jewels are *alive*."

Swann stopped dead in his tracks. He glanced uneasily at Benozzo. Then he laughed bluffly. "Nonsense! They're just jewels. We'll have one analysed. We've got plenty to spare one." He chuckled richly.

"They're not just ordinary jewels," Benozzo said flatly. "I've thought that for some time. I vote we get off planet—fast."

Swann glanced casually from the port. He said: "The weather's breaking up. Clouds. Going to be rain before the morning. I guess it gets cold here, which would account for the natives' fur hides. All right. Bright and early, we blast off. Now, I'm tired. I'm turning in."

Benozzo couldn't sleep. The rain came, thrashing gusts that sleeted against the spaceship and thrummed like a crazy drummer's fingers on the metal hull. He rose, threw on a windcheater, and went out to walk in the rain. Stuffed aboard a space can for most of his life, the feel of the rain on his face was good and Earthly and reassuring.

The aliens were abroad in the downpour. In the murky light, Benozzo could see them, flitting between the trees. He kept close

to the ship and lit a cigarette under cover of a fin. Standing there, the glow of the cigarette cupped in one brown hand, he saw it all.

Dark shapes trudged past, dragging little carts on wheels, fitted with tarpaulins. Benozzo could see right into the carts. They were piled high. Piled with the bodies of natives. Layer on layer, seemingly tossed in haphazardly, eyes blind and blank, fur lacklustre and dank, the bodies of dead aliens rolled past on the carts with only the mournful sounds of the rain in the forest for a funeral march.

A voice said: "What the hell is going on?"

Violently startled, Benozzo flinched, half-crouching. He swung round in a squelch of mud and saw the gangling figure of Jenkins swaying from the airlock.

"Get back inside, you drunken fool!" he blazed, reaction roughening his tongue.

"I'm—not drunk!" Jenkins said with immense dignity. Then he slipped and skidded on slimy mud. He recovered, swaying precariously, and blinked at Benozzo. Light from the airlock spilled out. Looking quickly into the forest, Benozzo saw at a glance that all the aliens had vanished. "Did you see what I saw?" asked Jenkins.

"Yes, you idiot. And you've scared them off."

Swann's voice rose. "Come inside you two and let a man get some sleep." He sounded sleepily indignant.

Benozzo favoured Jenkins with a glare, and went into the airlock and so to his cabin where he lay and thought fantastic thoughts. Just as he was about to drop off he heard a ghastly scream. He used the word ghastly mentally, because he could think of no other way of describing the hideous yell.

He met Swann at the lock. The captain had a hand gun, shining in the light. Together they went out.

"Jenkins," Swann said. "He couldn't have come back."

They found the astrogator lying with his head in a pool of water. He was breathing—just. They lifted him and squelched back. Swann was breathing hard. He was mumbling about what he intended to do to Jenkins when the drunk came round.

"Well," Swann said half an hour and several black coffees later. "What happened?"

Broken words, frightened shiverings, recollected horrors—it all rumbled out. "Four of them grabbed me. Strong—I couldn't break loose. They started to drag me off and then one of them—one of them——"

"Yes—well—go on."

"One of them threw me on the ground and another one lay

down beside me." Jenkins was shivering uncontrollably now. "It was horrible. He lifted up the fur—and he had a jewel growing out of his head. A big one. It was brighter than any we've seen. It looked evil——"

"A lot of——" began Swann.

"Let him go on," said Benozzo. His face was drawn.

Jenkins wiped his mouth, shuddering. "But that was only the beginning. I could see the jewel. Glowing. All the crimson wires were alight. It swelled. I thought it must burst, it was getting bigger and bigger. Then it broke. And—and another jewel came out—on a stalk. On a stalk! Oh, my God!"

"All right." Swann was sweating. He shook Jenkins savagely. "Another jewel grew from the first. Then what happened?"

"No! No!" Jenkins thrashed about on the bunk. "Keep it off! Don't let it touch me! *Keep it off!*"

Swann wiped Jenkins' flushed forehead roughly with a sponge. "He's delirious," he said.

"Can't you tell us any more, Jenkins?" asked Benozzo.

"I don't remember anything," Jenkins said, his voice flat. He glanced up, showing the whites of his eyes like a bad egg. "What happened then? I was dreaming? I was dreaming, wasn't I?" He pleaded with them, his fingers plucking, plucking, at nothing.

"Yes, Jenkins, you were dreaming," said Benozzo.

Swann and Benozzo moved away from the bunk. "I wish I drank!" Swann said bitterly. "Hell—that mad story has shot my nerves to hell."

"Drink and spacemen don't go together," Benozzo pointed out. "So these aliens aren't so furry and friendly after all."

"If that drunk's story is true. Sounds like D.T.'s to me."

"Maybe. We'll shove off today, though?"

"Oh, sure." Swann looked towards the locked cabin where the jewels lay in a pile of fire. "Oh, sure. Only I'd like to see if we can pick up a few more. We've a bit more trash left. I'd hate to go home with that aboard instead of gems. Would seem a waste, somehow."

"After what Jenkins has told us?"

"Drunken raving."

"I don't know. I don't know. I wouldn't like to chance it."

"Scared?"

Greed and pride clashed in Benozzo with common sense and his instinctive fear of the unknown. After all—they were **Earthmen**, weren't they? They had guns. They could show these dirty **aliens**

a thing or three, couldn't they? If it had been him, instead of Jenkins they'd picked on—why. . . . He shuddered, suddenly.

"Well, Benozzo? Are you scared?"

"I ought to knock your damn teeth down your throat, Swann. You know I don't scare easy."

"Well, then. Let's unload the last of the trash. We can pick up a lifetime's earnings in a couple of hours! Think of it, man! No more work, no more sweating over tubes. Wine, women and song, for as long as you live."

Feeling as though he were somehow signing away his birthright for a mess of pottage, Benozzo said: "All right, then, Swann. But we'll wear guns."

"But of course," Swann said. He felt relieved, and at the same time uncomfortable. It wouldn't have taken very much more argument on Benozzo's part to have talked him out of this last transaction. But—hell, there was money in it, wasn't there? Buckets of money! Well, then, greed casts out fear, Swann told himself, cheering up.

And it made him feel like a man.

The rest of the night, stormy, unpleasant, was spent in uneasy fits and starts of rest and nightmarish sleep and abrupt, sweat-sodden awakenings. They were both glad when a watery daylight dawned. This planet might be Earthlike—but that only operated on the strictly physical and meteorological levels. After checking that Jenkins was still in a drug induced sleep, they went outside, the guns big and bulky on their belts.

No natives were to be seen. Water gathered sky reflections in the ruts left by last night's carts.

"Now what?" demanded Benozzo. "Come on—let's push off."

Swann gestured, his hands full of cheap trade goods. "Look at all this. Money denied us. Just because these damned natives won't show up. I'll teach them!"

He drew his gun and fired three times into the air.

"Can it, Swann!" Benozzo had a tickling sensation in his stomach. "You'll only stir up trouble. Come on back. Let's blast off."

Swann looked towards the tree circle. His face was bloated, puffy with a night's sleeplessness. He looked somehow unwashed, a sort of common denominator of all that man would like to forget in himself. Then he smiled with satisfaction.

He fired again. "There. That's roused them."

From the trees came again that solemn procession, with the

children gambolling at its flanks. But this time they could both see that the number of aliens was markedly reduced. The thought—preposterous but persistent—occurred to Benozzo that for each jewel they had in their strong room, a native life had been laid down.

Very quickly the bargaining began. Swann's hands were not quite steady as he stowed jewels away into sacks and shovelled across trinket after trinket. He was generous. He gave better value than he had ever allowed his mean soul to give before. Pretty soon he turned to Benozzo and said: "Shove these bags into the store, Benozzo, and bring a couple more sacks. Then we'll finish up."

"You be all right?"

Swann patted his gun. "Sure, boy. Sure."

Going through into the locked strong room, the jangle of the key in the lock still in his ears, Benozzo heard again that—ghastly—shriek. It reverberated through the spaceship. And, in the same split second, he saw a fierce and lambent glow shine from the piled sacks of jewels; each jewel must be giving off tremendous light and heat—he could see and feel it through the strong sacking.

He staggered back, his hands over his eyes. The sacks he carried dropped to the deck. They shone like pools of molten gold.

He was running back to the airlock, the gun in his hand, long before his mind caught up with his bodily reflexes. He dashed into the lock. He did not know what he expected to see.

Swann was standing crouch legged, in his familiar fighting stance that he had copied from long ago—standing in the lock, the gun still smoking in his hand, straddling the blasted body of a native. The fur ran with pink goo.

"What happened?"

"Nothing. They tried to jump me. I shot this gook." Swann's voice was high-pitched, not under control. He swung the gun as though seeing it for the first time. "Get back. We're blasting off—now!"

"But you'll crisp those natives——"

"They'll run. Get to your engines."

Benozzo hesitated. Swann rarely used that tone. Then, thankful to be leaving the planet, he ran down into his engine room. He heard the airlock clang shut. He could still not evaluate what had happened. As soon as they were in space he must check with Swann, and tell him about the eerie glow that had transfigured the jewels.

The first job was to get off the planet, away from the baleful influence of the furry aliens.

When at last he was free to go into the cabin, after one of the

worst takeoffs that Swann had ever made, Benozzo found a reluctance to enter, a feeling of a barrier in his way, a vague alarm tugging his clothing. He shrugged it off and went in.

Jenkins was lying on the deck. His head was caved in.

Swann said, before Benozzo had time to do more than stare: "The drunken idiot. He slipped out of his harness on takeoff. Hit his head."

Benozzo ignored all that. He stared hard at Swann.

His mind refused to accept what his eyes saw. His sanity shut out the messages that pounded at his brain.

Swann said: "What is the matter, Benozzo? Why do you stare so?" The voice was slipping more and more out of control. As though Swann's guiding intelligence was forgetting how to use his body. "Come here a minute, Benozzo. Talk—I must with you—I must talk to you."

"Talk from there," Benozzo said hoarsely. He felt down for his gun. He had taken it off when he had strapped himself in for take-off. Swann laughed. It was not an earthly laugh, even though it came from earthly vocal chords.

"No gun, my friend? But I have gun. See?"

Swann's gun pointed directly at Benozzo's stomach.

At last what Benozzo could see about Swann forced itself through into his consciousness, and his mind at last accepted it as a fact of existence.

A glowing, lambent jewel grew from Swann's temple.

"You're not Swann." Benozzo heard his own voice as though listening to a tape played at the wrong speed. "You're not Swann. You're alien." His voice keened upwards, frightening him more, even, than what he could still only half comprehend. "You're an alien!"

"So, that is true. Swann is no more. Even his memory is going—but I have retained the essential parts. I can fly this spaceship, and that is enough for me."

"For you." Benozzo was astounded that he could sustain this bizarre conversation. "And the others?"

"When we reach your planet we will find plenty of humans to give us whatever information we require. All we need of you and your friend is a means of transportation."

"We," Benozzo breathed. "We. Who the hell is we?" But he knew who this alien being in Swann's body was talking about. He knew. Hadn't he seen the empty husks of the furry people—when the alien intelligences had been withdrawn from them?

It had all been that foul-minded Swann's fault. Benozzo felt

sick. If Swann hadn't been so greedy. If he hadn't insisted on going back for just that one last time. If he'd been satisfied with what he'd taken.

But he, Benozzo, had gone along with that greed.

Swann—or the alien thing that had ejected Swann from his brain and body—pointed the gun, jerking it. "We need more room. We must expand—and you and your ship came at—taking over—all the planets—no stopping——" The alien was losing control rapidly now. Benozzo, watching, felt despair.

"You alien jewel-beings won't stand a chance when you reach Earth," he said. "Swann didn't think of these things in a clear light. And you don't possess all his memories. You haven't a chance——" He sprang, hands outstretched like raking claws—or the spread arms of a supplicating man.

The gun had been stopped down to stunning power. Benozzo went on, through the air of the cabin, eyes glassy, face loose, until he struck a bulkhead. He slid untidily to the deck.

The jewel in Swann's temple blazed up in greedy fire. Swann lay down beside Benozzo—and the jewel flashed and swelled and burst and a new jewel—a baby jewel—extended on a stalk, lightly touched Benozzo's temple, clung. It grew there. It sent its hair-fine wires into Benozzo's brain. It took control of his body.

Presently, Benozzo rose and smiled at Swann.

"Our friends will be pleased."

"When we reach this Earth—they will each one have a physical body—and will be able to reproduce freely."

"The law of continence will no longer apply when there are millions of bodies to take over."

Although the tones were flat and the words not English, the air of satisfaction—of gloating satisfaction—was unmistakable.

Swann pointed at Jenkins. "This body I killed. It is filled with the unholy liquid that destroys us at a touch. We must dispose of it."

Benozzo nodded. "The unholy liquid!" He shuddered. "Let us hope there are only a very few of these madmen on Earth. They must all be destroyed."

"Oh, yes," the alien in Swann's body said with a gruesome echo of Swann's swaggering self-confidence. "No sane man would drink this destroying unholy liquid. We'll have no trouble taking over the Earth."

Solar System Ecology

Is there life on other worlds? This is a question which has fascinated mankind ever since the study of astronomy as we know it first began. In this article, a popular scientific writer gives his answer in the light of the latest available information.

Out *there*, beyond the limits of Earth's atmosphere, lies a Universe new to mankind. Already the coming "conquest of space" is referred to quite casually. Man is on his way up and out.

Out there lies a Universe where water and oxygen are rarities, where cold and heat and sleeting radiation surpassing anything experienced by Man are the signposts to the new frontier of space.

The sign says: "Earthman, stay home."

But, of course, he won't. Soon there will be intelligent life on other planets—human life. Scientists are intrigued enough to speculate now about what sort of life, if any, will be waiting to shake hands—or tendrils.

Ecology is the science of the inter-relationship of living organisms and their environments. By applying their knowledge of terrestrial conditions, by ingenious use of costly and complicated equipment, by correlating facts from different branches of science, and by sheer speculation, ecologists and physiologists have recently been attempting to find

an answer to the long-plaguing query: "Is there life on other planets?"

The short answer is: "Yes." The logical one is: "Wait and see." Not one of the planets of the Solar System will be a paradise for colonists—each will offer a continual struggle for survival. None of the planets can supply us with anything that we don't have right here on Earth, as far as we know now. Man will either have to create small zones in which he can fit his own ecology; or he will have to adapt bodily.

Curiously enough, we know less about the conditions on the surfaces of most of the other planets of the System than we do about the surfaces of many of the stars. Mercury always has one face turned to the Sun; almost half of the planet is always in darkness. Venus, our nearest and brightest neighbour, has an impenetrable cloud layer that reflects most of its sunlight. Jupiter, Saturn, Uranus and Neptune have so highly compressed and deep atmospheres that their true surfaces are invisible. Pluto is too distant to show even as a disc; in the 200-inch telescope Pluto

appears as a star-like point of light.

So, whilst our present knowledge of the Solar System gives no direct evidence of any past or present intelligent life, it is impossible to be dogmatic. No science can give an absolute answer when insufficient facts are available.

Life is the most curious phenomenon of which we know. The only general definition of life is one involving entropy, the tendency for all forms of energy in the universe to degenerate into heat and so increase the entropy of the universe. If part of this energy flow is diverted and used for the purposes of an organism, then this is life. The conditions for life cover practically the whole globe of Earth—the only places where life of some sort cannot exist are those where there is no liquid water.

But terrestrial life is based on the chemistry of a few light elements and one particular physico-chemical process, the utilisation of photosynthesis to obtain the energy necessary for life—either directly by plants using chlorophyll, or by other types eating part of a chain of life that has its beginnings in photosynthesis. Carbon is always present; atoms of it joining to form millions of different compounds. The other main constituents of living matter are hydrogen, nitrogen and oxygen, together with a little of the medium weight elements such as iron and iodine. Most of the heavier elements' compounds are poisonous and are not biologically useful, although it is interesting to note that grass will not grow in the absence of traces of cobalt.

Water is an important single factor, for it is found in all terrestrial life, acting as a solvent and allowing many of the biological constituents to travel through the body. It also acts as a heat exchange fluid removing heat from the muscles, and it is a raw material, together with carbon dioxide, in the formation of sugars and starch.

Having grasped this rough outline of what life as we know it demands, can we extrapolate the laws governing life on Earth to conditions elsewhere? Other forms of life may be possible; life based on different chemistries from that of carbon; life obtaining its energy directly from atomic fission or fusion or from magnetic or electrical field forces; life so alien that we may not recognise it as such.

And there are other chemicals that might be useful in the building block stages of life. We know that liquid ammonia has many of the solvent properties of water and is present on Jupiter, Saturn, Uranus and Neptune. Liquid sulphur may have similar properties with sulphides and silicon imitates carbon in forming a large series of compounds. With a variety of possibilities before the always urgent power of life, it is well to remember that the Solar System contains eight other planets, one star, several thousand asteroids and thirty satellites, any one of which may contain some form of life.

But the temperatures in this system range from the $5,000^{\circ}\text{C}$ at the Sun's surface, to near absolute zero, -273°C on Pluto. Apart from some bacteria and seeds which can withstand a temperature of 120°C for several

hours, and together with some algae, lichens and mosses, can exist in a dormant state at liquid helium temperatures, near -233°C , active life can exist only in the range from -5°C , just below freezing water, to 80°C . It is in this 85°C range that we must look for habitable planets; with the proviso that sunlight, carbon dioxide for plants, oxygen and water are all also available.

The Solar System, in more ways than one, revolves around the Sun. There is only a small shell, about 75 million miles wide, around the Sun in which there can exist a planetary environment at a temperature suited to life as we know it. In this band we find Venus, Earth and Mars. It does not matter if the temperature range is greater than that of 85°C ; life can probably go through a dormant phase outside it.

Mercury is too near the Sun; sunward face with a temperature above boiling lead, near 400°C ; dark face below the temperature of liquid nitrogen -253°C . The outer planets beyond Mars are all too cold for active life; Jupiter's temperature is near -100°C and the planetary temperatures decrease through the series out to Pluto.

So we are left with two planets; Venus shrouded in mystery, and Mars. Nothing is known of Venus' surface; the upper atmosphere contains no water or oxygen, but a great deal of carbon dioxide. It receives almost twice as much solar radiation per unit area as does Earth; temperature near the equator is about 55°C at mid-day. Water and oxygen may

exist near the surface; although it might be expected to rise above the heavier carbon dioxide, so that the Venus dust-bowl theory may, as well as the jungle theory, be near the truth.

Mars has an atmosphere of sorts and near the tropics varies from 30°C at noon to -70°C at night. Whilst the Martian climate is subjected to larger temperature differences than Earth during one day, the temperatures do include an active living range. There are no seas or mountains; yellow dust storms are frequent, but the atmosphere does contain carbon dioxide and water. Clouds can occasionally be seen and it has recently been proved that the polar caps are composed of ice. Unfortunately, no oxygen can be detected. The Martian atmosphere is similar to that 10 miles above Earth and water would boil at 43°C instead of the 100°C at Earthly sea level.

This eliminates the possibility of Earthly type warm blooded animals; but the green areas of Mars change colour, yellow to brown following seasonal changes. They must be self-perpetuating, or the blanket of dust would cover them. The infra red spectra of the Martian surface is similar to that reflected from plant life upon Earth.

Biologically speaking, Mars is not a dying planet; it is a young world, as is shown by the amount of carbon dioxide present.

The satellites of the Solar System are all small and not one is large enough to hold even as much atmosphere as Mars, whilst most have as little as our satellite, the Moon.

So, by our standards, the greater part of the Solar System is unhealthy for terrestrial life. But encysted bacteria and spores in a dormant state could travel across space, driven by light pressure, so that we might expect to find some form of recognisable life wherever conditions are moderate enough.

Apart from other considerations, it would seem that again only Mars and Venus might be *made* suitable for human life.

Mars could be reconstructed using unlimited thermo-nuclear power to decompose the surface rocks to increase the atmosphere so that more complex plants could grow, through the irrigated water supplies and the heat in the atmosphere.

Venus would be more difficult to "terraform." The whole atmosphere would have to be converted, water and oxygen created to make a habitable planet. This type of giant programme of planet reconstruction

certainly will not be worth while until the utmost use has been made of the Earth's surface; deserts irrigated, jungles cleared and controlled, mountains removed and the natural wealth of the Earth properly and sanely utilised. Any project on Earth would be simpler than tackling another planet.

The other alternative, one that really belongs to science fiction, is to adapt Man to his environment. If a planet such as Mars has less oxygen than Earth, then the colonists must be bred for extra lung capacity and the ability to withstand cold. Even so, it is difficult to conceive of any adaptation of the human body being able to live on the planets beyond Mars.

Still, we know little of the other planets and less about the conditions on their surfaces. We cannot really be certain about anything until we visit them. As we will.

Unless we are visited first.



New Hard-Cover Science Fiction Reviewed by

KENNETH F. SLATER

A large number of science-fiction addicts also appreciate good "horror" stories of the supernatural, and with the present dearth of good science-fiction books those of us who detest "weird" yarns and fantasy stuff will perhaps not object too strongly if I mention the occasional supernatural story—I know a certain proportion of NEBULA's following will like this offtrail material.

If you recall the old years of "Weird Tales" grandeur, you will also recall Seabury Quinn's "Jules Grandin" stories. I was very strongly reminded of these whilst reading *THE DREAMERS*, by Roger Manvell (Gollancz, 12/6, 206 pp.). The plot elements are very similar—the supernatural threat, the "detective-story-sequence" in which the source of the threat is traced, and the climax of the battle with the evil power. Such story-telling should follow a straightforward and simple formula, in essence; any complex counter-plotting can often destroy the effectiveness of the work. Mr. Manvell, I am glad to say, would seem to agree with me on this, for his side-themes are all simple and do not cut

across the main sequence of events.

Miss Fettes, postmistress of a small village, has a dream. A singularly horrible and frightening dream. Shortly after she is compelled to tell a friend of this dream—nightmare would be a more apt description—and then the friend has a similar dream . . . but carries it a stage further. The friend's husband, to whom the dream is then related, is also afflicted by this mounting horror, and the continuing sequence of the dream is so terrifying in its effect that a doctor has to be called to him. This far, the idea is easy to follow—each person to whom the dream is told promptly falls into the scene of the dream, lives through the already-related section, and carries the horror one step forward.

The doctor, however, tells the story of the dream to a lady before he himself sleeps; and that night awakens in the throes of soul-destroying horror with vivid recollections of the dream. Realising that there is something more to these events than a neurotic hysteria, he hastens to the home of the lady, to discover her dead, terror distorting her features.

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By Alfred Bester

(Sidgwick & Jackson, 12s. 6d.; SFBC, 5s. 6d.)

May/June, 1958:

CHRISTMAS EVE

By C. M. Kornbluth

(Michael Joseph, 10s. 6d.; SFBC, 5s. 6d.)

July/August, 1958:

ROBERT HEINLEIN OMNIBUS

(Sidgwick & Jackson, two volumes, 9s. 6d. each;
SFBC, two volumes in one, 5s. 6d.)

----- ENROL HERE -----

These events occupy only the first quarter of the book, and from here on actual battle with the force of evil commences. Dr. Martin consults a friend in London; the friend, after visiting the scene, decides a specialist must be called in, and he hastily summons Dr. King. Dr. Amenu King is an African, a black man, and for some reason Martin is prejudiced against dark skins. Violently prejudiced indeed. Here is one of the sidelights to the main theme (although it has a direct connection with the climax), and the overcoming of this prejudice is essential as a first step in destroying the evil.

I can hardly say more about the plot without giving a complete précis, but I think I have said enough to interest those who appreciate this "borderline" type of story. Let me add that Mr. Manvell's descriptions, though couched in simple terms, are far more effective in implicate horror than many of the pretentious and over-verbose, over-adjectival scenes set by followers of the Lovecraft school. He manages to convey suspense by understatement rather than by polysyllabic utterances; his characters are realistic—in the main

tion yarn in that Mr. Jones provides no solutions, facile or otherwise, for the problems he presents. **ON THE LAST DAY** (Jonathan Cape, 15/-, 266 pp.) is the story of the events leading up to what may well be the last day, the day the I.C.B.M.s with H-bomb warheads fly out.

The story is of the type that doesn't begin anywhere in particular, and finishes with an event, leaving one to imagine what one will about what went before, and what follows—if anything. The purpose of the book is, I feel, to convey a message of the futility of nuclear war. If this is so, it falls short of success in so far as the science-fiction addicts are concerned, although it may quite well have that result on the less specialised reading public.

The British Government—what there is of it—sits in Quebec. These right little, tight little isles are in the hands of the Russian invaders. Just how this has come about without someone, some place, aiming off with an atomic weapon or two is not explained. Personally, now that we have tactical atomic weapons, I think it highly unlikely that any "major" campaign could be conducted without their use—

is a small step from the es to the big ones. How is an opinion only, and

Jones's plot the "gov-in-exile" has to be into being. The choice ec was unhappy, for here an underground move-f French-Canadians, the f Montcalm, who still under the loss of their at the hands of the ritish.

In the Treasury department is

usually expect of a science-fic-

Bernard Austen, through whom we follow the action; his great friend from boyhood is Alan Shore, a leading scientist in the missile project. Apart from other ties they have a joint enthusiasm for music, and are both members of an orchestra formed by a Polish refugee from both British and French-Canadian members, and which has been encouraged as a possible meeting-place where the doubts of each side for the other may be resolved. Naturally, it has been used by the "Sons" as a place to start off their agents; equally naturally, Canadian security has placed its own agents there to spot the agents of the "Sons".


Austen becomes attracted by a young French-Canadian girl, Denise, and they fall in love. It is reasonably obvious to the reader, even before Mr. Jones makes certain you are not mistaken, that Denise is at least in sympathy with the "Sons", even if she is not an active agent. This is more than suspected by Levrault, the head of Security; and he causes her arrest and "questioning" until Austen secures her release—just in time to enable her to put the finger on Alan. (Actually she doesn't, but it looks as if she did to the reader.) Meanwhile, Alan is worried. He carries the load of the I.C.B.M., and the additional and very personal worry of his wife and family—who were in a ship torpedoed just as it was leaving Britain, and who may or may not have been rescued, and who may or may not be in Russian-occupied Britain. Then added worry results when General Cart-

wright, in a discussion, reveals that the target for the first I.C.B.M. may be London, not any Russian city (I frankly didn't get the logic behind this, but it is quite possible that there was not supposed to be any—there is little logic behind the H-bomb, anyway, which is one of Mr. Jones's main points).

Another member of the band, a sergeant-major, has involved himself with another French-Canadian girl and has got her into trouble; although this has little to do with the central plot, it gives an ideal example of the different ways of life of the people involved in these circumstances, and their affairs sound a minor key accompaniment to the main theme. Other subsidiary affairs help to give an impression of depth to the story.

Little of the entanglement is resolved, although Alan is killed by the "Sons" in an attempt to thwart the British (it is never clear whether this attempt is a result of hatred or a desire for peace—like all human aims and motives, it is mixed and uncertain), and Denise is killed in an attack on a launching site just as the I.C.B.M. takes off. As I said, Mr. Jones offers no solutions, he simply propounds the problems. I am not at all sure that he lays the important ones out clearly—but I'll certainly say he writes a very effective story, with moments of humour and moments of pathos, times of delight and times of tragedy. In other words, a story of human beings caught up in the horror of threatening total war. Well worth reading, but only borderline science-fiction.

SCIENTIFILM PREVIEW



News and Advance Film Reviews Direct from Hollywood's

FORREST J. ACKERMAN

Run for the hills, folks, **THE COLOSSAL BEAST** is coming!

The Beast is the sequel to **THE AMAZING COLOSSAL MAN**. While shooting, it was first known as *The Return of the Colossal Man* and, later, *The Revenge of the Colossal Man*.

I got the story of the sequel from Bert Gordon, who wrote and produced it, on the set of the picture while the final scenes were being shot. The Colossal Man was going through his Kong-like performance of swatting at a gnat-like model plane. Later I had some publicity pictures taken with the "giant". His make-up was reminiscent of the giant in one of Gordon's previous pictures, **CYCLOPS**.

THE COLOSSAL BEAST opens with a brief, breathless sequence before the title and credits come on the screen, of a terrified Mexican boy racing a truck away from some unseen thing that is pursuing him. The thing is unseen but—not unheard: a great drumbeat of footsteps is heard above the roar of the engine and the screech of the tyres. When the car goes out of control the boy runs for his life down an empty stream bed till he stumbles and falls and a black shadow envelopes him as the title appears.

Picture proper opens with an American named Swanson reporting the theft of his truck to the police sergeant in a little Mexican village. The boy who "stole" the truck is soon located across the street in a doctor's—in a state of shock. He is no more help than the little girl was in **THEM!** who had seen the gi-ants.

The car owner, accompanied by the policeman, goes to the spot where the boy was found. But his car is not around. The tyre tracks suddenly come to a halt. The policeman observes that "It looks like the car went straight up in the air, señor!" To which Swanson snorts, "It was equipped with heater and radio, but it didn't have wings". And later that day, in the news, a telecaster reporting the incident of the truck that flew away, jokes: "Well, the birds grow pretty big in Mexico."

Joyce Manning, sister of the Colossal Man, though she believes him dead has a hunch about the mysterious happening in Mexico and gets hold of Swanson. In her apartment in Beverly Hills, California, she introduces Swanson to Col. Baird. The possibility that her brother is still alive is brought up by Joyce, but the brass considers it

utterly impossible: "Believe me—and all the medical authorities agree—no man, even if he was sixty feet tall, could take those two bazooka charges and fall over Boulder dam and live. The drop alone—over 700 feet—would kill him."

Disappointed but undaunted, Joyce goes to Mexico to see the boy. She sits by Miguel's side during the night. He murmurs: "HOMBRON!" What does it mean? "It is hard to say," the doctor says; "a great big fellow, like an ogre in a story. A monster, a giant man."

Before long it is established that the Colossal Manning is alive and a plan to drug him with chloral hydrate impregnated bread is effected. Captured, and in a comatose state, he is transported across the border back to the States, where his fate is the same from here to finis as the brontosaurus of *THE LOST WORLD*, old Kong himself, the Venusian ymir that came *TWENTY MILLION MILES TO EARTH*, and all other unfortunate beasts that grow too big for their bridges: he's destroyed till next time. Although this time it looks like he's really cooked (and in colour, for the final few seconds), as the script reads: *The Colossal Man puts out a hand towards the power lines, then lunges at them suddenly. The current flows through his body, visibly, turning his flesh the colour of molten steel. For a long beat, he hangs there in the air, burning, turning white, glowing. His flesh and muscle burn away, and he is an incande-*

scent skeleton in the night. Then even his bones are calcified to ash, and as they drop in powder to a glowing heap on the ground, we SUPERIMPOSE on the quiet night sky: THE END.

If I may be permitted an ugh-jestion? *THE ASHTOUNDING COLOSSAL MAN.*

To bring you up to date on title changes:

Keepers of the Earth (completed) has become *ATTACK OF THE BLOOD-LEECHES.*

THE COSMIC MAN (he has two heads) replaces *Monster from the Sputnik.*

Teenage Witch changed to *DEBBIE AND THE DEMON.*

VILLAGE OF THE DAMNED for John Wyndham's "Midwich Cuckoos".

Promised but not hoped for: a Paramount production, *I Married a Monster from Outer Space!*

Promised and hoped for: production of two Karel Capek classics, *WAR WITH THE NEWTS* and *ROSSUM'S UNIVERSAL ROBOTS!*

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WALTER WILLIS writes for you

Not even my worst enemy would call me a worshipper of Lonnie Donnegan—I like my jazz hot or cool, not half-baked—but the other day I read about something he did which put him right up in my estimation. Apparently at one of his recitals a gentleman in the front row of the stalls squirted him with a water-pistol. Mr. Donnegan, I was delighted to read, did not fall for that silly *The Show Must Go On* stuff and carry on as if nothing had happened, with evidence to the contrary dripping down his lapels. No, he retired briefly into the wings and returned with a soda syphon with which he drenched his opponent. It seems to me this shows a fine originality of mind, and if something similar could be guaranteed to happen at each of his performances I believe I would attend one, if I could afford the cost of admission after buying a stirrup pump.

The reason this trivial incident finds its way into this thoughtful and cultured column is that it reminds me vividly of the Manchester Science Fiction Convention of 1954, when an unscheduled incident exactly like this was scheduled to happen during an ostensibly serious lecture. But perhaps I had better explain here that this Conven-

tion was the only public function I ever heard of that was better planned by the audience than by the organisers. How this odd state of affairs came about was that the organisers happened to be largely a group of serious-minded northern fans who had been very critical of the previous year's Convention in London and who had decided to try to do better themselves. The London fans were only too familiar from bitter experience with the things that could go wrong at Conventions, and it released some deep well of frustration in their souls to plan things to go wrong deliberately. I've come upon a scrap of paper on which some of the earlier simpler ideas were noted down, and most of even these were so fiendish I hesitate to quote them here in case they're taken up by the League of Empire Loyalists and public life in this country is brought to a standstill. The simplest one was to spread a little sugar in the aisles, down which "late-comers" would tiptoe at intervals, pausing in their crunching progress only to ask in stage whispers, "Have I missed anything", and to be answered "No". It was felt that the effect of this would increase as the programme wore on. Meanwhile other saboteurs would sit in the

front row with a blown-up balloon in one hand and a pin in the other. They wouldn't actually *do* anything, but it was thought that the psychological effect on the more timid speakers would be considerable. There were dozens of these playful suggestions, summarised in top-secret circulars under the code name Operation Armageddon, but I must admit, even if it means this is the last of these columns you'll see in NEBULA, that my favourite was the one involving one of those sets of little metal plates which, when dropped, sound more like breaking glass than an elephant sitting on a conservatory. At intervals during the programme, this terrible glass-breaking noise would be heard from the bar, accompanied by a drunken voice singing "I belong to Glasgow". I should perhaps explain that Peter Hamilton, that year's Convention chairman, was well known to be a strict abstainer.

But of course it all turned out to be what in science fiction fan circles is known as a Daugherty Project, after one Walter J. Daugherty, of the Los Angeles Science Fantasy Society. ("Why, it will be just like a Daugherty Project, except that it will actually happen!") In any case I doubt if the Londoners would have been one-tenth as fiendish as their imaginations, but what actually happened was that the Convention Committee ran into so much trouble of their own that they were anaesthetised; the London people rallied round and helped and after all it turned into one of the happiest Conventions of all time, and certainly

the most disorganised. The single exception was the start. The last year's committee had been criticised for programme delays, whereas everyone knows these are a Law of Nature at Conventions, and the Operation Armageddon schedule for this point involved a chanted count of "Sixty . . . fifty-nine . . . fifty-eight . . ." and so on, ending at the advertised time of commencement, when a starter's pistol would be fired. By an amazing coincidence the official programme organisers had had the same idea and the programme did start off with a take-off count, and on time. That was the only thing in that extraordinary weekend that went according to anyone's schedule. You should have been there.

Reviews.

PERIHELION No. 2. Bryan Welham, 179 Old Road, Clacton-on-Sea, Essex. 1/- per copy. A new fanzine produced by a new fan group with headquarters over a fish shop. There may be no hum like plaice, but the only smell off this magazine is of hard work. It's beautifully produced and the material varies from excellent to only as far as mediocre, which is surprising for such a young magazine.

CAMBER No. 9. Alan Dodd, 77 Stanstead Road, Hoddesdon, Herts. 1/- per copy. A not so sophisticated newcomer to the science fiction list. The content is varied and of interest to the newcomer. Reviews, stories, news and gossip about science fiction on films and television.

GUIDED MISSIVES

LETTERS TO
THE EDITOR

Dear Ed.,

It has surprised me very much since your Photo Feature started that you have kept very much to the same writer, Kenneth Johns. Is it not the policy of your magazine to encourage new contributors? Only on brief appearances have I seen Donald Malcolm and Dr. A. E. Roy. I feel it would be a pity to have such a good idea as the Photo feature series spoiled just by having the same writer too often so come on, give someone else a chance.

ELIZABETH Mac KINLAY,
Glasgow, W.

* *Science features differ from stories in that new or unknown contributors have seldom the reliable and up-to-date sources of information essential to the writer of fact articles.*

The pseudonym Kenneth Johns conceals the identity of a scientist with up to the minute information on new developments in astronomy, physics, and chemistry constantly to hand and he, in co-operation with a well-known science-fiction author can provide us with a reliable flow of material which makes the continued appearance of our photo feature series possible.

Now that this feature has been running for over a year contributions are beginning to come in from other reliable sources—including the two you

mention—but the standard of scientific accuracy in this series being what it is, it seems likely that the number of contributors to it will continue to be small.

Dear Mr. Hamilton,

Number 27 is the first issue of NEBULA that I have ever read. I will say that I quite enjoyed the stories and found the magazine eminently satisfying. I happen to like the short story format; I think that it is ideal for the development of many of the imaginative themes of s. f. I liked ESCAPE FROM PLENTY, COLOUR BAR, and RISK ECONOMY in that order.

I felt rather indifferent to the Novel and Novelette. This is not a new feeling with me; I have acquired a distaste for these story-forms because of their misuse by s. f. writers. The novelette usually degenerates into space-opera and there is a proliferation of characters and events which compels the writer to resort to gadgets and metaphysics to resolve his plot vagaries. I have found them to be, quite generally, a complete bore.

The denouement in THE HIRED HELP failed to satisfy me. The idea that a superior branch of the human race will intervene to assist us after a nuclear war strikes me as naive. It will require a more skilful and

persuasive writer to convince me that such a thing is credible. My feeling is that any other more advanced branch of "homo sap" is more likely to cry "Hands off, leave these snooks to solve their own problems!" Historically, the expansion of Occidental technologic civilisation has brought destruction to other less advanced societies. Look at the list—Inca, Aztec, Indian, Chinese, etc.

R. B. KILTIE,
London, S.W. 5.

** It is to be hoped, as the human race begins to develop mentally and morally—as distinct from its current progress in purely scientific and technological directions—that our attitude towards the weaker branches of our own and other species will become rather more mature than it has been up to the present.*

Dear Mr. Hamilton,

I agree with your recent remarks about science-fiction films. It seems to me that film companies could do worse than re-release the older films such as *Destination Moon*—the best ever made—*When Worlds Collide*, *Conquest of Space*, *War of the Worlds*, etc., some of which have already been re-shown in my area. At least these would serve to remind the public that good intelligent science-fiction films can be made.

MICHAEL J. HARRINGTON,
East Ham, London.

** They certainly would, Michael but so would two or three really first-class new ones.*

Dear Ed.: Is there any chance of a sort of cryptic criticism of the future choices in "Something

ONE GUINEA PRIZE

To the reader whose Ballot Form (below) is first opened at the NEBULA publishing office.

All you have to do, both to win this attractive prize and to help your favourite author win the 1958 Author's Award, is to number the stories in this issue in the order of your preference on the Ballot Form below, or on a postcard if preferred and mail it immediately to NEBULA, 159 Crownpoint Road, Glasgow, S.E.

Journey to the Interior

P.S.

Nothing For My Noon Meal

Training Area

Lone Voyager

The Wanton Jade

The Covetous

Name and Address:

Mr. Arthur Smith, of Hull, wins the One Guinea Prize offered in Nebula No. 27. The final result of the poll on the stories in that issue was:—

- | | |
|-----------------------|-------|
| 1. RISK ECONOMY | |
| By Philip E. High | 23.5% |
| 2. THE HIRED HELP | |
| By John Brunner | 22.0% |
| 3. THE GREAT GAME | |
| By Kenneth Bulmer | 20.0% |
| 4. COLOUR BAR | |
| By Jonathan Burke | 17.6% |
| 5. ESCAPE FROM PLENTY | |
| By W. T. Webb | 16.9% |

The result of the poll on the stories in this issue will appear in NEBULA No. 33.

to Read"? I have found a great similarity to my own judgment when a book I have read is reviewed in your columns, and I think a short note giving, not the outline of the plot but an estimation of the quality of the appeal of the book in question, with a reference to the taste of potential readers, should be given with each review.

A. T. MUTCH,
Gairloch.

* *An interesting suggestion, Mr. Mutch, which has been duly passed to our Book Review Department.*

Dear Ed.: At the moment we are in the tail of an ice age, so why, in stories of the future, although the climate is often controlled, is it almost always described as being a similar climate to that which we enjoy today? It is going to be much hotter.

Also at the present rate humanity is unlikely to survive, and I don't refer to the threat of atomics. The human race shows every sign of specie decline. Large increase of numbers, increasing size of individuals, no predators, no food hunting or disease, and living in large groups. In any case, up to the present time in the history of this planet mammalian species have thrived in cold weather; while the reptiles have passed through two ice ages, surviving a period of decline during each. After the first ice age, the reptiles spread out and they may well do so again providing the weather is warm enough. The reptile needs less food for its size, recovers from injuries more easily, can go long periods with-

out food, is extremely hard to kill, and suffers less risk and inconvenience in reproduction. Personally, I think that the most likely future dominant will look rather like a Tyrannosaurus.

J. CURZON,
Buckinghamshire.

* *Providing humanity avoids near future destruction in a nuclear war and is not wiped out by the attack of a mutated virus I am very much of the opinion that the reptiles will have to wait until Earth becomes a candidate for Solar absorption before they will have an opportunity to produce their "dominant race"*

The limitless challenge of spaceflight and the dangers involved in exploring and colonising new planets will, if humanity has to face them soon enough, provide a more than adequate substitute for the stimulative effect of bygone dangers. If, however, spaceflight is delayed for too long a period, it seems likely that the dynamic energy which has driven the human race upwards from the Caves would have to expend itself in one final stupendous war which would, of course, mean the end of everything, including the planet Earth.

These, to me, are the two most likely "future histories" for the human race. The one a story of expansion and fulfilment; the other, one of frustration and final self-destruction.

Which is the more likely? Why don't you write, giving your opinion? Your letter might be printed in a future issue of NEBULA.

GALACTIC OUTPOSTS—*continued from inside front cover*

it is found that they are distributed evenly on each side of the Milky Way but avoid a region on either side of it. In addition, with the exception of a small minority, all lie in one hemisphere of the sky. Astronomers have been able to measure the distances of the clusters from us by using the convenient fact that they contain stars of great brightness known as Cepheid Variables. These stars fluctuate in luminosity in a strictly periodic manner and the length of this period is related unambiguously to the real average brightness of the star. Since the astronomers can measure the apparent brightness of the Cepheid, they can then state how far away from Sol it must be to have that brightness. The distances found for globular clusters range from 16,000 to 160,000 light years and a cluster may have a diameter of about 60 light years.

In this way, Dr. Shapley and others have found that the system of globular clusters forms a spherical cloud about our galaxy, a cloud having the same centre as the galactic centre. Since the Sun, with Earth, is about two-thirds of the way out from the galactic centre, most of the clusters are seen on one side of the sky.

In recent years the Great Nebula in Andromeda has also been found to possess a system of globular clusters and it is likely that these star-collections are regular features in the development of a certain type of galaxy.

Ever since man with his big telescope has discovered and studied them, the globular clusters have provided their fair share of problems, many of which remain unsolved.

Estimates of the numbers of stars in typical clusters are probably reliable. Many contain about 100,000, the stars, as can be seen in the photograph, being packed in the central regions and thinning out in number towards the edge. In order to register the sparsely-populated outer regions, the central region is so over-exposed that the individual star images run together. It can be calculated that in the central part of a typical globular cluster, the star density is greater than 1,000 times that in the vicinity of the Sun. Although collisions between stars even in a cluster are rare, the night sky to an inhabitant of a planet orbiting one of its central stars must be one of breathtaking beauty with red super-giants mingling with white stars and fainter yellowish Sun-type orbs.

Many dynamical theories have been advanced to account for the precise way in which the number of stars per unit area becomes less with increasing distance from the cluster centre. Early theorists treated the stars in a cluster as molecules in a gas and obtained partial success in explaining the distribution of stars within a globular cluster. But even today it is not clear how far out in radius clusters extend, nor how the stars within them are distributed in mass, nor what is the relationship between mass and luminosity.

Again, the method of origin of a cluster is still uncertain. Astronomers do not believe that the members of the cluster simply came together by chance and stayed together. It is more reasonable to suppose that they were born from the same volume of interstellar material, though not all at the same time since it is known that many of the stars in a typical cluster are only one-hundredth as old as other members. This knowledge arises from the widely-differing rates at which stars of different mass use up their substance in shining.

The globular clusters are orbiting the Galaxy though one revolution must take hundreds of millions of years. They form a screen of outposts to our stellar system, a screen so far away that light received by us now from the nearest member started on its journey before mankind's earliest civilisation was founded; while mankind itself was not in existence when the stars in the farthest globular cluster sent out the light by which we see them today.

Yet such is man that in some far future he may reach these outposts of whirling worlds and find—what? Only time will tell.



Art by Son.

Another scan
by
cape1736

